

DEVELOPMENT ASSISTANCE AND HEALTH PROGRAMS:

ISSUES OF SUSTAINABILITY

A.I.D. PROGRAM EVALUATION DISCUSSION PAPER NO. 23

by

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The views and interpretations expressed in this report are those of the author and should not be attributed to the Agency for International Development.

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FOREWORD

The purpose of the A.I.D. Program Evaluation Discussion Paper Series is to stimulate dialogue on development problems by formulating and testing hypotheses and by identifying issues requiring additional study. Papers in this series seek to examine development experience as a basis for observations and conclusions concerning a program and to apply the findings to policy issues. The papers present what is known from experience and evaluation evidence and identify what remains to be learned from further evaluative studies.

Program Evaluation Discussion Papers are exploratory; they are not intended to be comprehensive, conclusive, or primarily technical. The authors of the papers are encouraged to critically examine explicit or implicit program assumptions; to look for cross-sectoral linkages; to examine the impact of developing country institutional factors and of A.I.D.'s organization, staffing, and procedures on effectiveness; and to identify alternative approaches and policy options.

We hope that the discussion papers will help stimulate innovative and more effective programming and project design and that they will also be of interest to scholars carrying out research on development. More important, we hope that the papers will elicit responses from our readers--responses that will confirm or refute assertions, refine the analysis or identify other issues for analysis, or suggest case studies that will help to clarify issues that remain unresolved.

About This Paper

Improving health in the developing world has long been an objective of A.I.D. and its predecessor organizations. Health has been viewed both as a basic human need and as a prerequisite for development. A.I.D.'s recent emphasis has been on improving the health and survival of children. Since the beginning of the 1980s, the Agency has obligated nearly \$1.5 billion to health activities (nearly \$4 billion if the health-related sectors of family planning and nutrition are included). Over its long history with health programs, A.I.D. has accumulated extensive experience with a variety of health and health-related program approaches, including integrated primary health care services, vertical programs aimed at single killer diseases, nutrition and emergency food aid programs, and family planning. During this period, A.I.D. has also assessed and documented the effectiveness of these various approaches in an extensive body of evaluative literature showing which program approaches work and which do not.

In 1986, the Center for Development Information and Evaluation (CDIE) initiated a group of studies focused on assessing the sustainability of health project activities and benefits after A.I.D. project funding ends. This paper explores issues in health program sustainability through a review of the literature on A.I.D.'s health programs and those of other large donors such as UNICEF, the U.N. Development Program, and the World Bank.

Since this report was written, CDIE has continued to analyze, research, and refine the concept of sustainability. A number of CDIE studies have been completed, which shed more light on the area. In addition, a significant body of relevant work by other offices in A.I.D., as well as other agencies and donors, has begun to accumulate which addresses this subject and adds to the issues and the discussion initiated here. This report does not attempt to capture these recent works, which will be incorporated in a subsequent synthesis report now under discussion in CDIE. The reader is asked to bear in mind, therefore, that we are presenting this report as an important point of departure in the larger effort now in progress, not as the final word.

Our last caution to the reader is that this report does not in any way attempt to tell the story of past A.I.D. or other donor accomplishments in the area of health project and program assistance. Many developing countries, by relying on their own devices and with outside assistance, have made great strides in improving the health and well-being of their populations over the last several decades. These success stories need to be told, but that is not our objective in this report. Rather, our purpose here is to try to improve our understanding of the factors that contribute to, or impede, the continuation of health project activities and benefits after donor funding ceases. Such understanding will, in turn, improve our ability to promote the long-term beneficial consequences of our health assistance programs.

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Shirley Buzzard

SUMMARY

The purpose of this paper is to generate discussion of the issue of health program sustainability--the ability of developing countries to continue to carry out health project activities and to provide benefits once donor support for a project ends. A fundamental question in a discussion of sustainability is the distinction between sustaining the activities and sustaining the benefits.

The issues are explored here through a review of the literature on health programs of the Agency for International Development (A.I.D.) and other large donors such as UNICEF, the U.N. Development Program, and the World Bank. All have had similar experiences.

A.I.D. has placed increasing emphasis on creating programs that will continue to provide benefits lasting beyond the period of its technical, managerial, and financial support. This review of the literature suggests that A.I.D.'s concern is appropriate. Project evaluations routinely raise questions about how the effort will survive A.I.D. disengagement.

This review of the literature has identified several program components that seem critical to sustainability:

- Financing
- Community participation in planning and implementation
- Host country policy
- Appropriate program design with respect to breadth of objectives
- Program management

These components, to be sure, are not independent of each other. Weakness in one is almost certain to weaken the others.

Financing of programs is certainly the most critical component of sustained health impact. The constraints to sound financing in developing countries, however, are numerous. Host country policies of providing free health care, combined with insufficient local resources and soaring inflation, place government officials in the position of having put funds where the politically sensitive problems are but of not having enough resources to lay the groundwork for a strong, comprehensive health care system.

However, financial failure may at times simply reflect other

program difficulties or failures. It may result from an unwillingness of users to pay for services that are perceived as inferior or of poor quality. Inadequate finances may also reflect inefficient administrative or management systems, poor leadership and planning, or inappropriate technology.

Studies have repeatedly shown that preventive and promotive health care are difficult to finance. Governments tend to allocate more resources to crowded urban areas and to emphasize curative care. Rural populations remain underserved, and millions of people, particularly children, die of diseases that are relatively easy to prevent.

A.I.D. resources usually help start or expand programs. A variety of experiments are underway to find ways to recover the costs of maintaining services. These have included community financing and fees for service. Increasingly, private health care professionals such as midwives, traditional birth attendants, pharmacists, private drug sellers, and private physicians are being incorporated into government health care programs. Private sector development, reoriented public policy, and other insurance schemes may provide some segments of the population with health care and allow governments to allocate more resources to the poor.

If people are going to pay for health care, particularly the preventive elements of a primary health care program, they must feel that the services are responsive to their needs. There is evidence that even poor communities can and will contribute time and money to a health program when they are involved in planning and managing it and when it has a strong curative component. Such community support can contribute significantly to cost recovery.

Host country policy in support of primary health care and of the extension of services throughout the country is important. Many developing countries have policies in support of countrywide prevention programs but still place greatest priority on curative services and health care in urban areas. Thus, host country policy should be matched with an aggressive program for carrying out that policy. That may mean limiting free health care, reallocating financial and human resources, and finding ways to incorporate private enterprise into the health care system. Charging for health services that were formerly free can be extremely difficult politically.

The earliest U.S. Government health programs overseas were "categorical" programs with very specific objectives, often in malaria eradication or other vector control. As A.I.D.'s experience with health programs grew during the 1960s and 1970s, A.I.D. developed programs that were broader based. Primary health care projects were typically "integrated" projects in which community health workers delivered a wide range of services, and the projects were managed through the national ministry of health. Evaluations

of the first round of primary health care projects have shown that most tried to do too much with too few resources. In trying to do everything, too frequently they were able to do little well.

During the 1980s, A.I.D. has found a compromise between the old categorical programs of the 1950s and the integrated programs of the 1970s. A.I.D. has emphasized four child survival interventions that are known to be effective: immunization, oral rehydration therapy, birth spacing, and nutrition. The evidence is not yet in on how sustainable this approach will be. We know that most categorical programs do not sustain themselves beyond the period of donor funding. Since the Child Survival Action Program, as it is known, combines the strengths of both types of programs, and since A.I.D. now places much more emphasis on sustainability than before, it is likely that lessons learned from earlier program types can be incorporated into current efforts.

The final component of a sustainable program is good management. A sustainable program must have trained and motivated staff, a functioning management information system, and a system of monitoring progress. Program evaluations routinely point to shortages of staff and supplies, lack of information for planning, poor supervision of field workers, and inadequate record keeping. Surprisingly, many programs with very poor management are able to continue delivering services. However, a strong management system undoubtedly lowers cost in the long run, minimizes wasted efforts, and increases impact on health. Creating lean and effective management will clearly be a continuing challenge to program planners.

This review of the issues relating to the sustainability of A.I.D.'s efforts to improve the health of the world's poor found that sustainable programs are most likely to result when they are affordable (by the country and the community), when beneficiaries have a role in planning and managing them, when simple but effective management systems are in place, and when program objectives are focused but not limited to a single intervention.

GLOSSARY

A.I.D.	- Agency for International Development
APHA	- American Public Health Association
HEW	- U.S. Department of Health, Education, and Welfare
HMO	- Health maintenance organization
LAC	- Latin America and the Caribbean
ORT	- oral rehydration therapy
PAHO	- Pan-American Health Organization
PRICOR	- Primary Health Care Operations Research
PVO	- Private voluntary organization
UNDP	- U.N. Development Program
WHO	- World Health Organization

1. INTRODUCTION

As recently as 50 years ago, famine and pestilence were common in both industrialized and nonindustrialized countries. Because of efforts by the international health community and because of increased interdependence and communication, dramatic strides have been made in improving the health of the world's people. While malnutrition and disease still exist, ways are increasingly being found to apply technology and other resources to minimize the crippling social and economic consequences of illness.

A recent review of health conditions in countries receiving Agency for International Development (A.I.D.) assistance has shown that health conditions have improved. Although it is difficult to establish to what extent improvements are the result of general socioeconomic changes, it may be assumed that A.I.D.'s efforts in health assistance have played some part in that improvement. "For 75 A.I.D. recipient countries analyzed, average infant mortality declined from 132 deaths per 1,000 live births in 1970 to 114 in 1980 and to 98 in 1985. Life expectancy at birth in the A.I.D. recipient countries increased significantly from 48 years in 1970 to 53 years in 1980 to 56 years in 1985" (Binnendijk 1986b, 1).

Health programs of A.I.D. and its predecessor organizations have addressed the problems of health in developing countries since 1945. The major trend of A.I.D. health policy during those years has been increased emphasis on the prevention of illness rather than on expensive curative and hospital-based care. In the process, has learned much about what works and what does not work in health programs. More important, it has discovered some of the more effective roles that an agency of its size and resources can play. Fortunately, A.I.D. has accumulated a body of literature documenting both successes and failures. From that literature some generalizations can be derived concerning the most cost-effective interventions.

1.1 Purpose of the Paper

This paper reviews A.I.D.'s worldwide experience with health care in order to identify issues affecting the sustainability of benefits and to generate discussion of those issues. The paper is based on a review of internal and external project evaluations and critiques of A.I.D.'s health programs. For comparison, information on the health programs of other large organizations, such as the World Bank, UNICEF, the U.N. Development Program (UNDP), and the World Health Organization (WHO) are included. This review of A.I.D.'s experience in health is intended to provide a frame of reference for a series of studies being conducted by A.I.D.'s Center for Development Information and Evaluation of the Bureau for Program and Policy Coordination in the health, population, and nutrition sectors. The purpose of the paper is to generate discussion of issues that appear to be related to sustainability, not to provide an exhaustive analysis of each topic raised.

The methodology involved a review of secondary and tertiary sources of information on A.I.D. and other health programs, particularly reports and studies reviewing more than one A.I.D. project. It excluded a review of the large body of literature on certain types of programs such as water and sanitation, PL 480 food assistance, family planning, and nutrition except insofar as these activities were part of primary health care programs. Also excluded in this review is a discussion of the activities of private voluntary organizations in A.I.D.'s health care projects.¹

1.2 The Importance of Sustainability

A project without lasting impact often has little consequence for development. While the benefits of immunization last a lifetime, new campaigns must be carried out with each new wave of children born. There are always diets to be improved, mothers to be educated, and illnesses to be treated. No matter how effective a program is at accomplishing its aims, if it terminates when the donor's funding cycle ends, the long-term effects will be inconsequential.

As this paper was being written and discussed with A.I.D. staff, the need for a careful discussion of what sustainability is became clear. The term is used in different ways, and programs are sustained in different ways. For the purpose of this review, sustainability is defined as a program's continuing to deliver services or sustain benefits after the donor's technical, managerial, and financial support has ended.

Although development planners recognize intellectually the importance of program sustainability, the actual emphasis of the larger development organizations such as A.I.D., the World Bank, and the U.N. agencies (e.g., WHO, UNICEF, UNDP) is on getting projects started and keeping them running rather than on longterm viability. Sometimes, too, the emphasis is on sustaining the infrastructure, such as buildings and bureaucracies, rather than on sustaining the benefits of the program. While certain types of infrastructure (e.g., financing) are essential to longer term sustainability, infrastructural development is not of itself adequate to maintain a health delivery system.

¹A.I.D. policy stresses sustainable impact by using private voluntary organizations and the private sector to deliver services as well as by strengthening government service delivery (A.I.D. 1986c, 12). Some of the most successful community-based primary health care projects have been carried out by private voluntary organizations. A major study of private voluntary organization efforts in health has been completed by Management Sciences for Health and covers some of the strengths and weaknesses of these smaller, longer term health programs (see Danforth 1986a and 1986b).

Almost all development projects face problems of sustainability over the long run, when the donor agency has moved on to other projects or other communities. Within A.I.D., the rapid turnover of staff at all levels and the tendency to allocate the most direct rewards to staff who design projects and implement them on schedule contribute to the relative neglect of concern with postproject activities and benefits.

Rapid turnover of A.I.D. project managers, national project directors, and supervisory sector chiefs, as well as host country ministers, deputy ministers, and project directors, leads to rapid changes in priorities and a lack of followthrough on projects. "Some projects that had high hopes of achieving sustainability when they were among the then-minister's and/or the director's top priorities may be weakened and their sustainability threatened by the lesser interest of their replacements" (A.I.D. 1985a, 17).

A second reason for a lack of sustainable projects is the A.I.D. project manager's relationship with the project during and after the funding cycle. There is a consensus that projects fare better when the project manager takes a positive and constructive role in project implementation (A.I.D. 1985a, 18). A.I.D. project managers, however, do not generally receive recognition for what happens to the project when funding ends. Consideration within the Agency goes to those who initiate projects (i.e., spend money) and keep the projects on schedule. A.I.D. staff are held directly accountable for the process of getting the project moving rather than for the results it produces over the long run. Most projects are funded for less than a 5-year period. What happens after the fourth or fifth year is theoretically of interest, but sustainability is not built into the project cycle beyond its funding.

A final reason for the lack of sustained impact is that few programs have been able to measure impact. Although the inability to measure the direct or indirect impact of a program does not affect whether the program benefits are sustained, lack of demonstrated impact can affect donor willingness to support programs and can make cost-effectiveness difficult to quantify. Despite serious efforts to monitor the effect of different interventions on health, few programs have succeeded in doing so. Data that are both reliable and valid are hard to collect, and the impacts of preventive efforts are elusive.

A recent review of evaluations of seven A.I.D. health projects (Morocco, Senegal, Colombia, Korea, Tanzania, Swaziland, and the West African onchocerciasis control program) indicates that sustainability is a problem with A.I.D. health efforts. Each of these evaluations raises questions about the long-term viability of the program. Programs with shifting political support, weak community involvement, and inappropriate technology were found. Most important, each evaluation team raised questions about

financing and policies that affect finance (Buzzard 1987).

The sustainability of projects has become a point of discussion within the entire development community. Concern has focused on the sustainability not only of project infrastructure (personnel, management structure, office space, vehicles, and equipment) but also of project impact. This may mean that the infrastructure is absorbed by other activities, making the impact invisible by sustained.

In health, an important aspect of sustainability is the long-range viability of preventive services. Because the utility of curative health services is more obvious, governments, local communities, and end-users are much more willing to pay for these services. In some places poor families may pay up to 30 percent of their income for health care. In the long run, prevention is less costly. Not only is illness averted but also the terrible human costs of mental retardation, physical handicaps, blindness, and death are minimized. Programs aimed at education and the prevention of illness, however, are much more difficult to sustain.

1.3 Overview of the Paper

Although there is no general agreement about the attributes of sustainable health benefits, some issues are mentioned frequently as contributing to the sustainability of project benefits. Among those discussed in this report are financing, host country policy, community participation, program type, and the management issues of resource allocation and information collection systems. The truth is, however, that we do not yet know what contributes to sustainability. Each project is, to some extent, unique, and there may be no single variable that determines the long-term viability of a project.

Section 2 reviews A.I.D.'s health policy history. It describes the general direction A.I.D. has taken in its journey to its present policy and some of the factors that determined the course of the journey.

Section 3 discusses some of the problems in health care financing because the viability of a health program is based on its affordability and its desirability (Blumenfeld and Pipp 1985, 20). Section 4 looks at some of the solutions to those problems. Programs may be financed in a variety of ways, including local government contributions, taxation, community contributions, and fees for service. The use of private sector physicians, insurance programs, and health maintenance organizations may defray some program costs.

Section 5 discusses community involvement in health programs and the implications of community participation.

Health programs are often characterized as categorical or integrated. Categorical programs, also referred to as vertical programs because of their organizational structure, have very specific objectives and are often nationwide campaigns aimed at reducing morbidity or mortality from a specific disease or deficiency. Integrated programs, by contrast, have multiple objectives and are more apt to be responsive to local conditions and constraints. The main issue may be the extent to which planning can be decentralized. Decentralized planning is more likely in integrated programs but not impossible in categorical programs. The relative advantages of categorical and integrated programs are discussed in Section 6, together with some of the unresolved issues.

Management issues relating to resource allocation and information collection systems are discussed in Sections 7 and 8. Section 7 discusses how a sustainable and effective health program uses appropriate, low-cost technology and delivers services through appropriately trained and supervised staff. A.I.D. has had considerable experience in trying to identify the least expensive technology and the most effective delivery system, but there is still no consensus on what constitutes the best solution. An efficient method of record keeping and information management is central to the effective management of a health program. Section 8 discusses the role of communication and program responsiveness in the context of sustainability.

A program is unlikely to be sustainable unless it rates high on the five factors identified here: financing, host country policy, community participation, program type, and management issues of resource allocation and information collection systems. But which are the most important? Are there other issues of importance? Section 9 reviews what is known about project sustainability and the "lessons learned" in each of the topic areas. The controversies that remain and recommendations for future research are also discussed.

2. A SHORT HISTORY OF A.I.D.'S HEALTH PROGRAMS

This section highlights some of the major trends in A.I.D. health policy. Four themes emerge from this review of policy statements and budgets for the past 25 years.

First, even before A.I.D. was formally created, U.S. international health efforts had emphasized malaria eradication. Following World War II, the emphasis was on drug distribution and spraying to control mosquitoes. Later, when these methods were found to be encouraging resistant strains of mosquitoes and malaria, the focus switched to environmental control and the search for an effective, low-cost vaccine. A.I.D. has also worked in other vector-control programs but in none with the consistency and endurance of its 30-year battle against malaria.

Second, the premise of the U.S. effort in international health programs has changed from health for health's sake during the pre-A.I.D. years to health for economic development's sake during the 1960s and 1970s, to health for the children's sake in the 1980s. In the early years, national and international organizations had little experience with international health efforts and carried out programs without much policy or experience to guide them. When the foreign aid program was reorganized under A.I.D. in 1961, "development" was a new idea and economic growth in developing countries was a high priority. Because healthy people are more productive, there was an effort to integrate health programs with agriculture and other economic development programs.

During the late 1970s and early 1980s, as drought conditions in the Sahel worsened, Americans began to see pictures of starving African children on their televisions. By this time, A.I.D. had enough experience with health issues to recognize that the worst killers of children were not exotic tropical diseases but simple dehydration and common childhood diseases such as measles and whooping cough. Programs focusing on children's survival are politically popular and relatively easy to design and carry out. The diseases are well known, the cures are at hand and require little technology to disseminate, and the impact is easily measured.

Third, A.I.D. has moved from a categorical program model to an integrated program model and now to an intermediate program model. A.I.D.'s earliest programs were categorical efforts (mainly malaria control, immunizations, and food distribution/ nutrition programs). During the 1970s and early 1980s, there was a strong emphasis on integrated programs. Health programs were integrated with education and economic development programs. The standard model for a health program was the integrated, community-based primary health care program offering simple curative and preventive services through a network of community health workers.

The integrated public health care program remains an ideal, but the reality is that few developing countries have the resources, personnel, and political commitment to maintain such programs. As a result, by the mid-1980s, A.I.D. health policy had shifted back to more focused programs while maintaining some elements of an integrated approach.

Finally, A.I.D.'s earliest programs were large, centrally funded programs involving several-countries and relatively large outlays of capital and personnel. During the 1960s and 1970s when grass-roots development was the mode, the stress was on smaller programs tailored to the needs of individual communities. However effective such programs are, they are difficult to manage. As the number of A.I.D. personnel was being reduced, each staff person had to handle more and more projects. Small, grass-roots projects are very labor intensive; from A.I.D.'s perspective it is more

effective for staff to manage a few large programs than dozens of smaller ones. Also, in order to disperse large amounts of money in a given fiscal year, larger projects are needed.

A.I.D. expenditures on health projects are presented in some detail in the references cited in this section. Because of the difficulty of translating figures into comparable terms and because the trends are clear from gross budget figures, no budgetary detail is presented here. In addition, it is difficult to sort out A.I.D. health expenditures over the years because some health-related activities were undertaken in other sectors and the costs are hidden in the budgets of other programs. Also, many other U.S. agencies are involved in health-related activities. These include the U.S. Public Health Service; the Departments of Agriculture, Labor, Interior, and Commerce; the Veterans Administration; and the Smithsonian Institution, as well as private institutions such as chemical and pharmaceutical companies, engineering and construction firms, foundations, professional organizations, voluntary organizations, universities, and hospitals (HEW 1965).

A.I.D. resources, particularly Economic Support Funds, are concentrated in politically unstable areas, and the history of A.I.D. expenditures mirrors the international political situation. These programs include large health projects.

During the 1960s, most health funds and personnel went to Southeast Asia, although the political importance of Africa was growing and A.I.D. health expenditures there began a steady increase. Since the Vietnam War, most A.I.D. health funds have gone to the Middle East, particularly to Egypt. Central America has become a large recipient of health funds in recent years. Not surprisingly, A.I.D.'s close relationship with the State Department has been reflected in A.I.D.'s budgets and policies.

2.1 Health for Health's Sake: The Pre-A.I.D. Years

Before World War II there was little activity in the field of international health. The Pan-American Sanitary Bureau, under the direction of the U.S. Surgeon General, and the International Health Office in Geneva were the two organizations concerned with international health. Both were small and served as information centers; they did not carry out programs of their own.

During this period, most international health efforts were implemented by private organizations such as missionary groups and by commercial companies such as United Fruit Company, Firestone, and Standard Oil (C. Pease 1985, 1-2). The Rockefeller Foundation, which had successfully carried out programs for hookworm prevention in the United States, began programs overseas in hookworm prevention and control of yellow fever.

In 1940, Nelson Rockefeller was appointed Coordinator of

Inter-American Affairs. After the war began, he suggested that a cooperative health service be established to improve health in Latin America. Eighteen Latin American ministries of health began programs for hospital and clinic construction, training, disease control, and environmental sanitation through the newly established Institute of Inter-American Affairs. Despite the difficulties that resulted from the shortages of materials (C. Pease 1985, 2), the Institute carried out 1,500 health projects between 1943 and 1953, with a budget of about \$100 million (HEW 1965).

The end of the war saw a flourishing of interest in international health stimulated by two important events: the establishment of the United Nations and the development in 1947 of the Marshall Plan for the reconstruction of Europe. UNICEF was created in 1946 along with the United Nations. In 1948, the Office of International Health became the World Health Organization (WHO), and the Pan-American Sanitary Bureau became the Pan-American Health Organization (PAHO). The Marshall Plan had few direct health programs, but as the first major U.S. commitment for longer term foreign assistance, it represented a major policy shift that was the forerunner of today's development assistance programs (C. Pease 1985, 3).

Health services in the Far East began with a 1946 survey of health conditions in the Philippines. An extensive health program (\$5 million) stressed improved malaria eradication, smallpox immunization, maternal and child health services, health education, and health training centers (HEW 1965).

In 1946, the United States provided 72 percent of the funding for the establishment of the United Nations Relief and Rehabilitation Agency. This sponsorship established the United States as a major force in international health (HEW 1965).

In 1949, the concept of longer term commitment was expanded to a worldwide program known as the Point Four program. Based on the model of the Institute of Inter-American Affairs, the program included technical assistance for health programs to Asia, Africa, and the Near East. Drawing resources from U.S. universities, especially schools of medicine, nursing, and engineering, the health component of the Point Four Program stressed disease prevention and control, health center development, institutional development, water and sanitation, and health education (C. Pease 1985, 4).

During the 1950s a number of health-related activities were undertaken by the U.S. Government. The passage of Public Law (PL) 480 in 1954 called for U.S. agriculture surplus to be sold overseas and the proceeds to be used for humanitarian purposes. Although PL 480 assistance was not earmarked for health programs, much of the local currency it generated was used to fund health, nutrition, and, later, research programs (C. Pease 1985, 5).

In 1955, a major international effort to eradicate malaria was undertaken. Multilateral, bilateral, and national programs involved a worldwide effort (except for Africa) stressing insecticide use and drug distribution (C. Pease 1985, 4). The program did lower morbidity and mortality rates in some places, but it also led to the development of insecticide-resistant strains of mosquitoes and drug-resistant forms of malaria. The effort to control malaria has been a major theme international health programs until the present.

In 1960, the Public Health Service Research Act permitted the U.S. Public Health Service to support bilateral agreements for exchange programs in science and technology with other countries and permitted the use of PL 480 funds for health research in countries with a surplus of currency from the sale of PL 480 food (C. Pease 1985, 5).

2.2 Health for Development's Sake: A.I.D. From 1961 to 1970

The creation, in 1961, of A.I.D. from the old foreign aid program marked a significant departure from earlier program styles. The old stress on technical assistance and grants was gone. The new program emphasized development and loans (C. Pease 1985, 6), although about half of all assistance was in the form of technical assistance provided through grants.

During A.I.D.'s first years, water and sanitation projects were underway in 45 countries, and A.I.D. had 366 professional, technical, and administrative health staff and a budget of approximately \$85 million a year. In FY 1963, over half the funds for health were provided through loans rather than technical cooperation and development grants (HEW 1965). A.I.D. health efforts stressed large-scale projects in primary health care, perinatal care, water supply and sanitation, nutrition, disease control, population and family planning, and biomedical research (C. Pease 1985, 6).

In 1963 it was decided that future A.I.D. support in health would be determined by the degree to which health problems, malnutrition, and population growth inhibited economic and social development. Priorities were to be based on the promotion of political objectives. Recipient countries would be those, such as Vietnam, where the elite were healthy but the poor were unproductive due to illness. The objective was to contribute to the economic and social development of a country by improving the physical strength, energy, and morale of its people. Such programs would also demonstrate U.S. humanitarian interests (Lee 1964). Program planners were motivated by the belief that it was better to wipe out disease "over there" than risk having to deal with it in the United States.

Although health services were expensive, they were justified by the belief that economic and social development could not take

place where people were ill. Health services in the early and mid-1960s were also seen as forestalling insurgency, especially in Southeast Asia. When political motives determined the type and location of programs, designing programs with a self-sustaining infrastructure was not a high priority. The emphasis was on rapidly reaching large numbers of people or politically important segments of the population.

A.I.D.'s earliest and most innovative efforts during the 1960s were in family planning. A separate Office of Population was created, and Title 10 of the Foreign Assistance Act earmarked funds for family planning programs (C. Pease 1985, 6). The Latin America region was the first to establish a population unit and provide regional funding for population projects.

In 1965, a 50-percent increase in health personnel was needed to carry out health programs in Vietnam, Thailand, and other Asian countries. During FY 1965 there were 51 A.I.D.-supported health personnel in Africa and 76 in the Near East and South Asia. Health staff in Latin America were reduced to 39 as resources were diverted to the politically sensitive areas of Asia and Africa (Lee 1964).

In 1967, with an A.I.D. health budget of \$109 million, President Johnson declared a massive attack on hunger, disease, and ignorance. The two main tools were to be agricultural development and health education. The major drive to eliminate malaria and smallpox continued. In Africa, specific diseases were targeted, along with urban water supply and waste control, health education, and training. In Latin America, in addition to planning and expanding national health services, A.I.D. programs targeted malnutrition in preschool children (HEW 1967).

In 1968, 42 of 59 new health projects were for population programs, marking the beginning of a major \$20 million family planning effort. Other priorities included environmental health and malaria programs (HEW 1969). The budget for population programs was increased to \$50 million in FY 1969 (HEW 1970). A new emphasis on grass-roots development programs also began in 1968, with a major policy change away from large, infrastructure programs toward projects to increase the participation and strength of private resources in the development process (HEW 1969).

In FY 1969, 90 percent of all country program funds went to 15 countries: India, Pakistan, Turkey, Bolivia, Brazil, Chile, Colombia, Dominican Republic, Peru, Tunisia, Indonesia, Korea, Laos, Thailand, and Vietnam. Thirty-four percent of all A.I.D. health staff overseas were in Vietnam.

2.3 Prevention of Illness: A.I.D. During the 1970s

During the 1970s, a number of forces merged into a strong

concern for the urban and rural poor. The congressional "New Directions" mandate of 1973 set the tone for development for the decade. The 1978 Alma Ata conference was a tremendous force for primary health care, and the World Health Organization declared a program of "Health for All by the Year 2000." The "small is beautiful" movement of the time translated into a rejection of high technology and an embrace of appropriate technology and rural health services (C. Pease 1985, 7).

Other forces also contributed to the development of A.I.D. health policies. Modernization and development theories, popular in the 1950s and 1960s, had stressed the importance of investment in the physical elements of national growth and the use of average national income as a measure of progress. Increasing inequalities between social groups led to a demand for a rethinking of development objectives to include social elements such as empowerment, participation, and equality. The new emphasis was on private enterprise, individual initiative, and greater use of technical assistance. Increased sharing through multilateral channels, food production, and population programs was a priority. By 1970, 22 of the 45 countries receiving bilateral aid had started official family planning programs; appropriations for these programs increased 64 percent over the previous year.

Another major thrust during the 1970s was to assist countries in developing national health plans. Only one of A.I.D.'s target countries had such a plan in 1972, but by 1979, 36 countries had national health plans or were receiving technical assistance in developing a plan (J. Pease 1980). The A.I.D. Bureau for Population and Humanitarian Affairs was created in 1972.

Since the late 1960s, development aid for Africa had been steadily increasing. In 1971, 20 countries were chosen for special emphasis. Budget allocations for health in Africa in FY 1971 were triple the 1970 obligations because of an increase in population activities and loans for health programs (HEW 1972).

A presidential directive in 1971 established three types of foreign assistance: development assistance, security assistance, and humanitarian assistance. Program emphasis was on agriculture, rural development, population, health, nutrition, education, and manpower development. Population funding continued to increase while health budgets overall went down. Thirty-six percent of the health budget went to Vietnam (HEW 1972).

Although A.I.D. health budgets were expanding in politically sensitive regions, A.I.D. began to lose health staff. From a high during the mid-1960s, total health staff dropped by 44 percent in 1974. Total funds decreased from over \$1.9 billion in FY 1973 to \$865.8 million in FY 1974. However, amendments to the Foreign Assistance Act in 1974 officially directed A.I.D. to work to improve the quality of life of the most disenfranchised members of

society, and this included increased measures for health. Although overall funding levels were down, the budget for health, population, and nutrition more than doubled between FY 1972 (\$41.8 million) and FY 1974 (\$104 million) (HEW 1975).

The mid-1970s also saw the beginning of the recognition of the problems of desertification in the Sahel. Assistance to Africa emphasized rehabilitation and emergency assistance such as food, animal feed, medicines, medical supplies, and emergency shelter (HEW 1975). Funding for projects came through the regional bureaus rather than the central A.I.D. Office of Health.

In the late 1970s, development was defined by the "quality of life," and there was an effort to identify and provide for people's "basic human needs." Development progress was measured by people's access to food, shelter, and water as well as their social needs for political participation and respect. Health, of course, was a major component of the basic human needs approach to development.

The foreign assistance legislation directed A.I.D. to cooperate with developing countries specifically in the following areas:

- Design and implementation of basic health care delivery systems
- Selective disease prevention and control
- Adequate drinking water and sanitation systems
- Related health planning and research (Foreign Assistance Act, 140[C])

Meanwhile, questions were raised about the appropriateness of the expensive Western model of hospital- and clinic-based medical care for developing countries. Three criticisms began to emerge:

1. Because people cannot get to the clinics and outreach programs are inadequate, clinic-based services do not reach most of their target population.
2. The services delivered are not those that will have the most effective impact on health conditions. Although designed to integrate curative, preventive, and promotive activities, in practice clinic-based services emphasize symptomatic, curative care. Resources usually are not directed toward the major causes of diarrhea, acute respiratory infections, and malnutrition.
3. Clinic-based services are relatively expensive. Because clinics can usually serve only those within an hour's travel time, additional clinics are needed, yet it is

financially impossible to expand a clinic system so that it provides facility-based care for all those in need (Berman et al. 1986, 6).

As concern over the effectiveness of the Western model of clinic-based care grew, evidence began to accumulate that community health workers could have substantial impact through low financial investments in small, well-managed projects (see Newell 1975; Djukonovic and Mach 1975). The success of China's "barefoot doctors" was widely reported as interest in this model peaked (see Horn 1971; Sidel 1972).

Meanwhile, the virtual eradication of smallpox in 1977 demonstrated that international cooperation and a focused program could have profound and sustained implications. The success attracted worldwide attention and stimulated interest in other categorical programs, particularly in immunization. Research was accelerated to develop vaccines for common childhood illnesses and vector-borne illnesses (C. Pease 1985, 7).

The health funding policies and programs of A.I.D. and other large donors changed substantially during the 1970s. As community development gained in popularity during the mid-1970s, there was a strong movement to foster national self-reliance and self-determination. Dependency theories in the development literature helped fuel a challenge to the basic tenets underlying much of A.I.D.'s earlier work in development.

2.4 Health for the Children's Sake: A.I.D. During the 1980s

The early 1980s saw a continuation of A.I.D. health-policy emphasis on community-based primary health care projects. Within A.I.D. there was also an increase in central rather than regional bureau funding of projects. Although the first formal commitment to primary health care came in the 1974 amendments to the Foreign Assistance Act, A.I.D. had no agencywide health policy until 1980, when it strongly endorsed integrated, community-based primary health care.

Because of A.I.D.'s overall commitment of Economic Support Funds to the Middle East since 1979, the greatest amount of funding for health has been through the Near East Bureau, which funded more health-related projects than all other bureaus combined (50 percent of all A.I.D. health funding between 1979 and 1985). Egypt received a significant amount of that money.

After 1982, the number of project starts increased considerably. The largest increase was in centrally funded projects, followed by those in the Latin America and Africa Bureaus, which both doubled the number of projects initiated. The Asia Bureau also doubled its number of projects although it still had less than half as many health projects as Africa. The Near East

Bureau maintained a fairly consistent number of projects over the decade, but had a substantial increase in budgets; projects were larger rather than more numerous (Pipp 1985, 6).

From the increased experience in primary health care projects and the incoming data on the early primary health care projects, three trends emerged that affected later programs:

- While A.I.D. has always encouraged project self-sufficiency, in the early days of primary health care programs A.I.D. supported host government efforts to provide free, comprehensive health care to all. Such policies were found to be unsupportable and inefficient.
- Fielding personnel and equipment to remote rural areas for health care services proved to be difficult. It was found that a collaboration between the private and public sectors in rural areas enables more community involvement and promotes further self-sufficiency.
- Integrated, comprehensive projects are complex to design and administer. Given the difficulties of implementing projects with scarce resources, A.I.D. found that selective interventions, particularly oral rehydration and immunizations, are carried out more effectively (Pipp 1985, 2-3).

In the 1980s, there has been a definite trend toward funding selective interventions. In comparing the data for different project types for the periods 1975-1979 and 1980-1985, Pipp (1985, 6) found a relatively stable distribution of projects in the earlier period but a clear preference for primary health care, immunization, and oral rehydration programs in the later period. Latin America, in particular, has a proportionately high number of primary health care activities.

A.I.D.'s most recent health policy statement singles out child survival as the most important means of improving health status in developing countries (A.I.D. 1986d; A.I.D. 1986e). Child survival, only a component of A.I.D.'s approach in the early 1980s, became the strategy of choice by 1985. It is estimated that up to one-half of all infants' and children's deaths could be prevented with immunization and the effective use of oral rehydration therapy to treat diarrhea. Nutritional assistance and child spacing enable surviving children to be healthier and stronger (A.I.D. 1986d, 4-5).

A.I.D.'s most recent policy statement incorporates the lessons from the earlier experience and stresses increased cost-effectiveness of projects through better management, design, and implementation. Progress toward self-financing is stressed, as is biomedical research, particularly in the development of

vaccines.

Detailed data on A.I.D.'s expenditures on health are summarized elsewhere (for example, see Pipp 1985; J. Pease 1980). Measured in current dollars, A.I.D.'s expenditures in health increased about six and one-half times between 1961 and 1985--from \$85 million in 1961 to \$550 million in 1985. The 1961 health budget constituted 9 percent of total development assistance; today it is 15 percent. In 1961, 366 personnel were administering programs in 45 countries; in 1985, 90 health staff were administering programs in 44 countries (HEW 1965; Ferguson and Pease 1985).

This short history of A.I.D.'s health programs traced these trends:

- A.I.D.'s decreasing emphasis on technical staff and its transformation into an agency of managers of projects that provide technical assistance through external contracts
- A.I.D.'s 30-year effort to decrease the effects of malaria and the shift away from eradication to the control and prevention of other vector-borne illnesses
- An increased concern with the rural poor
- The policy evolution from health for its own sake in the pre-A.I.D. years, to health as economic development during the 1960s, to health to save children's lives in the 1980s
- The movement from categorical to integrated programs, and then to an intermediate strategy
- The shift from large programs to small programs in the mid-1960s and 1970s and back to large programs in the 1980s

This review of the history of A.I.D.'s health policy indicates that the roots of current policy go back to A.I.D.'s earliest days. The shift from grants to a combination of grants and loans, the emphasis on results rather than what went into the project, and the continuing tension between categorical and integrated programs have all been steps leading to the current policy and emphasis on sustainable benefits.

Those who have lived through much of A.I.D.'s health policy history could, no doubt, tell us much more about the human and bureaucratic forces behind the major trends and about smaller trends within the Agency. It is unfortunate that the "official" and "unofficial" stories have not yet been written.

3. FINANCING HEALTH CARE: THE PROBLEMS

In a discussion of health benefit sustainability, no issue is less controversial than the importance of ensured financing beyond the scope of the sponsoring agency's commitment. The overriding policy issue concerns the distinction between public and private health care. What are a government's responsibilities in the health sector, and what can or should be handled by the private sector? Related issues are the problem of cost recovery and financial sustainability over the long run. Experience increasingly shows that health care financing must include mechanisms for mobilizing resources at all levels.

Projects have two types of costs: startup, or investment, costs and recurrent costs. Both are usually underestimated. Startup costs--the initial investment in training, equipment, vehicles, expatriate staff, and offices--are usually underwritten by the donor agency. Although it varies among projects and donors, recurrent costs--the annual cost of maintenance, salaries, supplies, and replacement--are usually assumed to be the responsibility of the host country. Often, too, there is a long transition period during which the donor provides significant financing of operating costs. Estimating such costs is very difficult; budgeting for them even more so. Some costs can be covered with internal budget allocations; others must be recovered at the point where services are used through various types of user fees, voluntary contributions, or community health fund schemes.

3.1 Host Country Policy

Most developing countries are working to extend their health care services into previously underserved areas. The primary health care model of community health workers guided by a community health committee has served as a goal for most countries. However, it is very difficult for health workers to focus on preventive care when curative care is inadequate. Their time is monopolized by medical emergencies and the treatment of wounds, respiratory illness, and gastrointestinal problems. Many primary health care workers spend most of their time as outreach workers for the curative system and have little time for carrying out education programs and vaccination campaigns or for organizing environmental improvement efforts.

A country's commitment to primary health care and the prevention of illness is reflected in its official policy, its actual practice, and its budgets. Most countries take an official stand in support of primary health care and health for all. Whatever their policies, however, they are sometimes constrained by political considerations and lack of resources.

Developing country governments usually support both hospital-based and primary health care. Although they have embraced the

principle of primary health care, few countries have elaborated a feasible implementation strategy. Because primary health care is often perceived as a separate system (some countries even have separate ministries to deal with primary or rural health care), governments frequently duplicate costly administrative functions rather than taking advantage of complementarities with curative care systems.

Although it is an enormous drain on resources, many developing countries remain committed to providing free health care for all citizens. Despite such a policy, however, services are usually available only to a few and then mainly in urban areas. Even where public health care is free, people still spend a significant portion of their income on private health care and medicines, which they perceive to be more effective and efficient than the care they receive at government clinics. While recognizing the necessity of government subsidies for some types of health care, A.I.D. supports selective cost recovery through user fees or in-kind payment for health care in those situations where there is a net benefit accruing from changes in cost recovery methods (A.I.D. 1982, 7). A country that has established a free health program finds it very difficult politically to begin to charge user fees. Yet developing countries lack the resources to build an extensive network of rural health posts and personnel without finding ways to substantially increase their health budget or make more effective use of current resources.

In their eagerness to provide services to a larger number of people, governments may expand their health programs too rapidly and fail to consider the investments required or the recurrent costs of existing and newly established programs. As a result, many community health workers have been trained but have not received necessary supplies or sufficient supervision (A.I.D. 1982, 7).

The U.N. Development Program (UNDP) has found that senior and middle-level officials responsible for planning and implementing health programs in developing countries do not fully understand primary health care. They think of primary health care as merely an extension of the health system to improve curative coverage in rural areas. "Policy makers and planners need to realize that the goal is rather a fundamental reorganization of the health care system, based upon a new way of thinking about health care and a redistribution of functions, involving a high degree of inter-sectoral co-ordination and an important role for communities" (UNDP 1983b, 14).

The discrepancy between policy and resource allocation is particularly acute in Africa, where resources are very limited. "In many African countries, commitment to the Declaration of

Alma Ata needs to be demonstrated by policy reforms which support the allocation of resources to the development of

cost-effective primary health care services. Investments in health must be promoted as integral components of socioeconomic development" (A.I.D. n.d.a, 11).

A.I.D. currently has a major interest in increased efficiency and quality of resource use, including resource allocation in both bureaucratized and decentralized systems. The Agency carries out and supports extensive research efforts in alternative delivery and financing strategies in order to identify new resource-use strategies and ways of circumventing bureaucratic handicaps.

3.2 The Low Priority of Primary Health Care in National Health Budgets

A.I.D.'s policy in health care financing has been to urge developing countries to reallocate resources away from costly hospital-based curative care toward preventive and promotive health care. This is done through performance-based budgeting for priority programs. A.I.D. also encourages host country ministries of health to identify means of using the private sector to deliver more costly curative services, freeing up scarce government resources to provide care for the poor.

Despite A.I.D.'s efforts, however, "priority continues to be given to urban services, usually in hospitals and clinics, since it appears to be politically difficult for most [developing country] governments to cut back on urban services in order to redistribute limited funds to rural and peri-urban areas" (A.I.D. 1982, 7). The problem is compounded by the commitment to (or history of) free health services. While the government should underwrite certain public health measures that pose a threat to the community, users, with the exception of the indigent or very poor, should pay for personal health services. Unfortunately, the very poor may constitute a large percentage of the population in some places (A.I.D. 1986b, 1-3).

A.I.D. works with governments to help them reallocate their resources. "Where government policies concentrate investment and operating funds in health on sophisticated clinic and hospital-based facilities, predominantly in urban areas, A.I.D. will engage in policy dialogue with officials to encourage reallocation of public resources within the health sector, or among government supported sectors, to support primary health care services" (A.I.D. 1984, 5).

3.3 Failure to Plan for Recurring Costs

To maintain existing primary health care projects and move to the next phase of improvement and expansion, senior government officials in developing countries are having to reevaluate their policies and the allocation of government resources.

Because of limited resources, developing countries cannot effectively expand, maintain, or improve their health care systems. Many community health workers often do not receive the supervision, backup support, supplies, and follow-up training they need to be effective. Referral systems are inadequate to handle case loads. Local patients may skip the community health worker and clinic and go directly to the hospital for care. Priorities are given to urban programs and then mostly to hospitals and clinics. Urban hospitals and clinics do provide a valuable service to the urban poor, but even they are often overwhelmed with patients in need of curative services. Developing countries cannot easily cut back on urban curative services to redistribute limited resources for preventive and rural services (A.I.D. 1982, 7).

Because primary health care has been established as independent systems instead of as complementary to existing curative systems, the alternative primary health care systems drain already limited resources. "The programs are often poorly designed, and the resources needed for continuation, much less expansion of the system, are not anticipated; economies of scale and transportation and communication bottlenecks are not considered" (A.I.D. 1982, 6). At the same time, independent primary health care systems can mobilize new resources, effectively by-pass red tape, and achieve program targets more effectively than can systems tied in with curative efforts. Such programs, however, may be vulnerable to changes in donor programming or funding priorities.

A.I.D.'s Bureau for Latin America and the Caribbean (LAC) has found that in most countries in that region "existing health resources are not allocated efficiently within the public sector. The high capital and recurrent costs of the hospitalbased curative system limited to urban populations consume a major part of the public sector health budget..." (A.I.D. n.d.b, 2).

Although Latin America has the most sophisticated health care systems of the regions in which A.I.D. works, planning for recurring costs is still a problem:

Financial resources for health services and water systems in LAC countries are limited and not likely to increase over the short term. LAC countries are not likely to significantly increase the proportion of their budgets allocated to the health sector, particularly given the high demand which agricultural and industrial development place on limited government resources.... Primary health care services, while less costly per capita, nonetheless generate considerable recurring costs for manpower, facilities and vehicle maintenance, vaccines and drugs, and transportation which cannot be met as long as the majority of LAC governments maintain policies of providing health services "free" to the public. Without

user charges and/or other forms of revenue generation, resources will remain insufficient to expand and/or improve primary health care services (A.I.D. n.d.b, 2).

The important issue is the degree to which health care financing schemes can actually produce additional revenue. Many such efforts fall substantially short of country and donor targets. In a review of eight primary health care projects in Africa, A.I.D. found that host governments have difficulty financing primary health care projects because the costs of supervision and vehicle maintenance are high. "Private sector implementing agencies in Zaire are more capable than the government to assume the recurring costs of [primary health care] in Zaire. Without continued assistance, the Government of Niger would not be able to continue training of health workers or infrastructure support for supervision at current rates" (A.I.D. n.d.C~ 3). This may be because private agencies are better at generating external funding and many use expatriate staff. Some vehicle costs and operational budgets may be funded by the donor or international implementing organization.

Continuity of senior officials can also be important to the sustainability of policy, programs, and budgets. "Changes in host-country government personnel and policies that are beyond A.I.D.'s control may severely affect the appropriateness and ultimate acceptance of a project design. By the time a project has been approved and activities have begun, it is quite possible that the key government officials will have been replaced" (Parlato and Favin 1982, 89).

The large donor agencies such as the United Nations, the World Bank, A.I.D., and other government development agencies have often provided funds to start a primary health care system, particularly in rural areas. However, most of these programs failed to consider the high recurring costs of maintaining such programs, nor did they consider fluctuations in foreign exchange rates and the extraordinary inflation in some countries. Thus when large donors end their funding commitment and local ministries are left to find ways of paying for systems designed to international, not local, standards, the programs face a financial crisis.

Finally, both A.I.D. and local ministries of health lack experience and data for estimating the costs of health projects. Foreign exchange rate adjustments, increasing fuel costs, and lack of data on usage and program costs have led to serious underestimation of program costs (Parlato and Favin 1982, 77).

3.4 Low Public Interest in Preventive Health Care

Even when official policy supports primary health care, budget allocations often reveal other priorities. "A disturbing paradox in most developing countries is that, while in policy terms national

health planning tends to give high priority to primary health care, the lion's share (often more than 50 percent) of [ministry of health] expenditures actually goes for hospitals" (UNDP 1983a, 3).

People want health care when they are sick. When they are well, health care is not a high priority. Although there is ample evidence that disease prevention is less costly than curative care, both in financial costs and in human and social costs, the value of disease prevention has never been widely accepted, even in developed countries. In countries where poverty is an overriding issue, paying for health education, vaccinations, and other preventive measures seems less important than food, clothing, or even luxury goods.

Where curative care is free, there is less financial incentive to prevent illness. Only when the cost of curative care becomes prohibitive, as it has in the United States, does the cost-effectiveness of prevention become apparent to the public. While some people still smoke, eat improperly, drink too much, and fail to wear seat belts, the public awareness of illness prevention has increased as curative costs have risen. Strong public support for disease prevention also typically follows a virulent outbreak of a disease, such as cholera or typhoid, or some other health crisis. But many people in urban areas view environmental sanitation, potable water, and public health services as the responsibility of the government and as issues over which they have little control.

The problem of preventive health care is most obvious in the area of financing. Because of the public's lack of support for preventive care, cost recovery through user fees and other community financing plans often fails (see Section 4). Thus, for preventive care, the public good may be different from the private good. This might limit private sector willingness to support primary health care programs.

In summary, the sustainability of primary health care programs in developing countries hinges not only on explicit policies supporting primary care but also on a reallocation of resources that less heavily favors curative care for those who can afford to pay. It also calls for a redistribution of health resources from urban to rural areas. The responsibility for these problems cannot all be placed on the host country. Donors have been responsible for designing programs that are beyond the means of host governments to continue.

To redistribute and improve the use of health resources, governments must explore new ways to cover health care costs, including full support for various prepaid, insurance, or private financing options. Most important, governments cannot continue to provide free health care. However politically unpopular, some type of user fee must be charged to generate more resources. Because of

the public's unwillingness to underwrite the costs of preventive care, charges for curative care must help subsidize preventive care and health education costs as well. This fact underscores the importance of integrating preventive and curative health services.

Unfortunately, governments usually cannot increase their health budgets but must instead increase the efficiency of budgeted resource use. Also, they need to seek innovative and efficient strategies for health delivery, including use of the private sector. The generation of funds through user fees to support inefficient, low-quality programs is not an answer to the problem.

4. FINANCING HEALTH CARE: COST RECOVERY

A.I.D.'s strategy for promoting self-sustaining programs combines an analysis of recurrent cost requirements, innovative financing mechanisms, and creative private sector involvement in health care. "The objective is a mix of host country public and private resources which, as part of an integrated system, delivers services most cost-effectively" (A.I.D. 1984, 7; 1986b, 3-4).

To maintain the reduced mortality levels that will result from its child survival strategy, A.I.D. will require the following commitments from host countries:

- Policies that promote improved health financing through resource mobilization and allocation, containment of escalating recurring costs, and the efficient organization of the health delivery system
- Increased private sector involvement
- Improved coordination among donor agencies (A.I.D. 1986d).

There is little doubt that more cost-analysis studies of health programs are needed. Several recent studies discuss the problems of defining key cost terms, linking costs to project outcomes, and assessing the economic advantages of using private sector providers (see de Ferranti 1984 Buzzard 1987; APHA forthcoming).

4.1 Community Financing

One cost-recovery option for health programs is to increase the contributions made by individuals and groups benefiting from the programs. The standard model for a community-based primary health care project includes community contributions at several levels.

To defray one-time and recurrent costs of health programs, communities may undertake many types of activities. However, the

financial dependability of these activities and their effects on the delivery and use of services vary. The most common types of financing schemes are as follows:

- Drug sales
- Personal prepayment
- Production-based prepayment (such as community gardens)
- Income generation (such as small businesses)
- Community labor
- Individual labor
- Donations and ad hoc assessments
- Festivals, raffles, and the like

Because cash can be used to purchase drugs and to compensate health workers, the most versatile financing schemes are those that generate money. Payments in labor or in kind, although less versatile, can also contribute significant resources. Community labor, donations, ad hoc assessments, raffles, and festivals are useful chiefly for one-time costs, especially for construction, equipment purchases, and the creation of revolving drug funds.

Community labor is most appropriate in construction projects; revenues derived from drug sales are most easily used to cover the costs of restocking supplies; and service fees are most appropriate for compensating community health workers. However, systems based on service fees and drug sales are vulnerable to interruptions in drug supplies, while prepayment and income-generating schemes are sensitive to market prices for the particular commodity. Donations, fairs, raffles, and other one-time fund raising projects are based on an acceptance of the program objectives, and their revenue potential is sensitive to economic conditions.

Community financing arrangements are often subject to mismanagement and technical error. Estimates of utilization rates and forecasts of demand are important in developing realistic budgets. Where records are poorly kept and staff unskilled in health management, problems in planning are common. It is difficult to plan and budget when funds are raised on an ad hoc basis. Inexperienced community committees may fail to guard against corruption.

To date, one of the major problems of cost recovery in A.I.D.-supported primary health care projects has been payment of community health workers. Poor or irregular pay leads to high worker turnover, high training costs, and reduced quality of service. The American Public Health Association's (APHA) study of 52 A.I.D. projects found that

efforts to keep costs of [primary health care] programs low by transferring responsibility for certain recurrent costs to the community have been partially successful. A number of projects have been successful in getting

communities to finance drugs, but of the 28 projects that use community financing to compensate community health workers, none has a satisfactory method of obtaining local support (Parlato and Favin 1982, 77).

Another report on the same material found that

there is no ideal method for worker payment.... Communities, and especially individuals, tend to be interested primarily in personal curative services, not in the full range of primary health care activities.... Direct payment methods do nothing to help the poor or persons without access to family wealth. Service fees can be adjusted for income but often are not, and drug prices must normally cover replacement costs and are difficult to adjust. Communal production, where feasible, may be a good financing method, but health programs have to adapt to existing social and political structures. If government payment is feasible, ways of using it to reward preventive work should be considered (Stinson 1982, 36-37).

The Sine Saloum Primary Health Care project in Senegal, which began in 1977, is an interesting example of a project that suffered from most of the standard problems--lack of financial support, lack of supervision and support for community health workers, an inadequate drug system, and poor transportation. A 1980 evaluation found the project fraught with problems. The project was subsequently redesigned, and a 1984 study (Bloom) found a remarkable turnaround. The project now serves as a rare example of a successfully self-financed community health program.

In the Sine Saloum project, compensation of community health workers varies by community. The health workers either sell drugs and retain some portion of the profits as compensation, receive a "donation" from each household, or receive payment, in cash or in kind, from clients. Each community constructs and maintains a modestly furnished "health hut" using locally available materials. The success of the program is attributed to its being both managed and financed at the community level. Each of the 378 communities has a health committee with the following responsibilities:

- Ensuring that health workers are responsive to the villagers' needs
- Ensuring that financial records of health hut expenses and services are kept, that drug supplies are replenished, and that funds are not misused
- Convening periodic meetings to review health hut management problems and community health problems
- Selecting community health worker candidates

The program focuses almost entirely on curative health services because the communities are not willing to support preventive services for which they have no perceived need. Although the program is still struggling with some problems, it has become "one of only a handful of primary health care programs in the world that are successfully managed and financed by users at the village level" (Bloom 1984, 24). Since the services offered are curative, the program probably best illustrates the point that people are willing to pay for curative services but not necessarily for preventive care.

On the one hand, community financing is an untapped resource. It can be a catalyst for community development by using local labor and local products for community self-reliance. On the other hand, community financing of health programs places the burden of health care on the poor, who are least able to afford it.

Health care, it might be argued, is a public good and should be paid for from general revenue. The APHA study of 52 health projects found that "in many countries, persons in rural areas are asked to pay for [primary health care], while those in urban areas have access to free care. In most of these rural programs, villages must pay for drugs, and in approximately onehalf of the projects, communities are being asked to finance their [community health workers]. This inequity is an issue which most of the governments have not addressed" (Parlato and Favin 1982, 77).

The use of community volunteers has not been found effective over the long run. Volunteers can be effective in shortterm campaigns but not for sustained delivery activities (UNDP 1983b).

A few projects, however, have had success with volunteers. The Community-Based Health Delivery and Family Planning project in Oyo State, Nigeria, uses volunteers to carry out educational and preventive services. It has been suggested that the project has been successful because of its strong community organization and active participation by individuals in the project. The project managers found that where stipends were given early in the project, it was difficult to switch to volunteers. "Once incentives are given, they create difficulties when stopped" (Weiss 1984, 4).

Stinson (1982, 41) found that community financing plans may be a partial answer but that most have not been rigorously evaluated, and there has not yet been enough experimentation with alternative schemes. Community contributions are good for one-time costs such as construction, but there has been no experience with community financing to pay for supervision, logistical support, or referral linkages, all of which are critical to the maintenance of a primary health care system.

4.2 Fees for Service

A.I.D. policy states that "private contributions for health services should be encouraged. These may take the form of fee-for-service, cooperative health organizations, or, where feasible, private insurance schemes" (A.I.D. 1982, 10).

Fees for personal health care should be distinguished from fees for certain public health measures such as immunizations. The cost of handling an epidemic would be so high that immunization represents a cost-effective public health strategy that should not be based on an individual's ability or willingness to pay (A.I.D. 1986b, 1).

In Latin American and Caribbean (LAC) countries, "primary health care services, while less costly per capita, nonetheless generate considerable recurring costs for manpower, facilities and vehicle maintenance, vaccines and drugs, and transportation which cannot be met as long as the majority of LAC governments maintain policies of providing health services 'free' to the public. Without user charges and/or other forms of revenue generation, resources will remain insufficient to expand and/or improve primary health care services" (A.I.D. n.d.b, 2).

Stinson (1982) found a number of alternatives in the fee-for-service approach. Fees may be set by the individual health care provider, by the community, or by some unilateral professional or government decision. Payments may go directly to the health worker or to the clinic or health center. The success of fee-for-service programs depends on patients' willingness and ability to pay, on the availability of alternative delivery systems, and on the perceived quality and effectiveness of services. There are few studies that have quantified these factors.

Also, in the design of projects, there is little consideration of total revenue requirements or of likely levels of usage.

Some projects have tried a sliding-scale fee structure for certain types of patients or certain diseases. However, if community health workers are pressured to give free treatment to the poor and to the influential, they will attempt to make up the difference by over-charging paying clients. Exemptions are best handled by a community committee, not by the health workers. For example, in a Nigerian community health project, while the community had agreed to-a small service fee from clients, "the community health workers did not collect fees from their relatives--a significant portion of their clients" (Weiss 1984, 4).

Charging a fee for service discourages nonessential use of health care services and enhances the perceived value of the service. Where drugs are included in the service charge, however, patients tend to demand drugs at every visit.

The UNDP (1983b, 7) has found that fees for service and profits from drug sales are unsatisfactory ways of compensating community health workers because payments come from only the ill and not the entire community. The fees unduly emphasize curative rather than preventive care. Using the profits from the sale of drugs to compensate community workers subjects them to unexpected interruptions in payment because of the irregularity of drug supplies in developing countries, particularly in rural areas.

Social marketing has been used successfully in the distribution of some types of contraceptive devices. Social marketing takes advantage of private sector retail skills, advertising, and distribution networks to disseminate contraceptive supplies. By establishing an appropriate fee structure, more expensive supplies (the pill) can be subsidized by the less expensive ones (often the condom). For supplies requiring no medical supervision (including oral rehydration salts, vermifuges, and vitamins), social marketing is low cost compared with conventional health supply delivery systems. It also provides wide coverage and may encourage use of the products (Binnendijk 1986a).

4.3 Incorporating the Private Sector Into the Primary Health Care System

Taking advantage of the full range of existing health care providers can also alleviate some of the pressures of financing primary health care. Few health programs in developing countries take full advantage of the services of private physicians, traditional healers, midwives and traditional birth attendants, private pharmacists and other drug sellers, and herbalists. The private sector sustains itself without government direction, and there is much to be learned about coordinating the public and private sectors.

4.3.1 Private Physicians

Private physicians are one source of medical expertise that few developing countries incorporate effectively into health planning for the public. Although physicians are scarce in some countries, their training represents a public investment. Private practitioners have the advantage of being able to provide one-on-one services and relatively high-quality care. They are heavily concentrated in the large cities, however, and are sometimes too specialized to serve the needs of the general population. Also, most private medical practitioners emphasize the treatment rather than the prevention of illness. Physicians may be a major obstacle to primary health care if they view community health workers as a threat to their business. In Korea, for example, private sector physicians, fearing a decline in business, were able to terminate a major primary health care effort (Dunlop et al. 1982).

Even when free public health care services are available, up to 80 percent of the population in developing countries continues to seek personal health services from private physicians, to use self-prescribed, over-the counter drugs, to consult private drug-sellers, or to seek out folk remedies. People commonly use public health care only when other sources have been exhausted (A.I.D. 1982, 9). A Government study in Egypt shows that 60 percent of the total health care costs are paid by individuals and families despite free public health services. Similarly, a study in Turkey found that 80 percent of the money spent on health care is from individuals seeking private sources of health care rather than using public health facilities, which are offered without charge (UNDP 1983a, 4).

Because the private sector is not a single organizational unit, the government may have difficulty collaborating with private professionals not under its immediate control. Although the private health sector is large and absorbs many people and a substantial amount of money, it is not easily managed by national governments. Most private health services are oriented toward curative care and more affluent patients. By contrast, all the special programs that deliver services to rural and disadvantaged people, all organized preventive services, and all training and research are carried out by public bodies and, increasingly, by private voluntary organizations (UNDP 1983a, 5).

A.I.D. is actively seeking ways to increase private sector involvement, including that of the indigenous private sector. The Agency urges program planners to make better use of private practitioners, both traditional and modern, including midwives (A.I.D. n.d.a, 10).

4.3.2 Midwives and Traditional Birth Attendants

A 1979 review of 45 ongoing projects funded by A.I.D. found that 18 were using or were planning to use traditional birth attendants or traditional healers. In general, there has been more success in training traditional birth attendants or midwives than in incorporating other types of traditional healers into the health care system. Traditional birth attendants are generally amenable to training that upgrades their skills, and they have the confidence of women in the community. Traditional midwives often provide marital counseling services to women and advise them on birth control and general issues of health for themselves and their children. They are often willing to stay longer with a new mother, help with housework, and provide moral support, which formally trained health practitioners have no time or inclination to provide (Pillsbury 1979).

The World Health Organization has taken the lead in encouraging developing countries to mobilize traditional medicine and its practitioners for primary health care. UNICEF has supported training for traditional birth attendants for over 25 years, especially in Africa and Asia. At least 20 countries, universities, or governments have established institutes of traditional medicine for research and treatment (Pillsbury 1979, 27-29).

The UNDP (1983b, 10) also supports the training and integration into the primary health care system of midwives and traditional healers, many of whom have been compensated for generations with in-kind or other noncash payments. Therefore, creating a system that uses these care providers would not involve recurrent costs that would affect the national health budget and would make the system more sustainable.

"Private practitioners--midwives, pharmacists, and traditional birth attendants, as well as physicians and nurses--can be retrained to provide a range of primary health services. Where private providers currently are functioning, it may not be necessary to train a new cadre of health workers, although measures to ensure better access to health providers by low-income groups may be warranted" (A.I.D. 1982, 9).

4.3.3 Pharmacists and Private Drug Sellers

Pharmacists, pharmacy workers, and small shopkeepers are a primary source of health care in developing countries. In addition to preparing and selling drugs, they also diagnose illnesses and prescribe medications for customers. Because most people equate drugs with medical care and because pharmacies are much more widely distributed than clinics, many people rely on selfprescribed medication or medicines suggested by the shopkeepers.

Some people spend a substantial part of their income on drugs. Although the pharmacists are not always qualified to diagnose an illness and the medications may be given in incorrect dosages,

people are willing to accept "free" medical advice in return for paying for the medication (APHA forthcoming, 85-86).

Private drug sellers have stalls in virtually every large urban market, where they sell prescription drugs, often expired, from Europe and the United States. These stall owners, frequently nonliterate, know little about the powerful medications they sell. For example, laxatives are often sold as a cure for worms. When the feces contain visible worm segments, people think they are being cured. In fact, the laxatives serve only to weaken the body and do nothing to cure the problem.

With training and technical assistance, private drug sellers and pharmacists can provide an important health service, but governments need to regulate the sale of dangerous medications by vendors who are unfamiliar with the products or their side effects.

4.3.4 Other Traditional Healers and Practitioners

Traditional healers and practitioners are the primary source of health care for about 90 percent of the world's rural population. They are also found in urban areas, where they attend mostly the poor.

A UNDP study found the absence of traditional healers in primary health care programs to be one of the most pressing problems facing these projects. The report also states that in most of the developing countries studied, traditional practitioners and traditional birth attendants play a large part in the primary health care of the people. Yet "the policy in the countries reviewed is to ignore these personnel and hope that provision of modern health services will lead eventually to their disappearance. The soundest policy toward traditional healers may be subject to debate, but Ministries of Health that simply ignore their existence are missing an opportunity to exert influence on the nature of health services used by millions of people" (UNDP 1983a, 30-31).

Rural people and the urban poor often feel more comfortable consulting traditional practitioners than those trained in modern or Western medicine. Traditional ideas about illness and its causes are often different from Western medical theories, and modern health care providers often seem cold, disinterested, or superior to the poor and uneducated. Another factor in favor of the traditional or folk healers is that they know the resources of the family and charge accordingly. Many accept only gifts in return for their service (Pillsbury 1979).

Traditional healing practices may be divided into three categories: those that are harmful (such as withholding liquids from children with diarrhea, cutting the umbilical cord with a dirty knife, or expelling "bad blood"); those that are neither helpful nor harmful (many ritual cures, harmless herbal teas); and

those that are helpful (herbal medication, presence of a midwife at births, psychological counseling).

One difficulty of working with traditional healers, bone-setters, herbalists, and shamans is that research is needed to distinguish among helpful, harmless, and harmful remedies. Although anthropologists and pharmacologists have carried out substantial research on traditional healing practices, that knowledge has not been widely disseminated. Many health planners dismiss all the services of the traditional healers rather than try to distinguish treatments that should be encouraged from those that should be discouraged. In parts of Asia where ancient medical traditions have been formally institutionalized and legitimized through schools, licenses, and institutes, there may be a clearer understanding of the treatments that are helpful. Traditional practitioners usually are quick to pick up the most effective aspects of Western medicine, particularly injections and pharmaceuticals.

Traditional healers can extend primary care to remote regions. For example, research is now underway in Brazil on the use of traditional healers for distributing oral rehydration packets. The distribution of oral rehydration solution through traditional healers extended its availability and provided a mechanism to upgrade the skills of the healers. Earlier research in Brazil had shown that mothers seek out traditional healers as their first source of health care. Mothers attempting to use the modern health care system experienced long waits, extensive travel, and expensive or improperly prescribed drugs (Nations and Auxiliadora de Sousa 1986).

Spiritualists have been found to be as effective as modern psychiatrists in treating mental health problems. Although providing spiritualists with additional training is difficult, when training is successful they can provide a valuable mental health service. Some training to enable these healers to identify physical problems and make proper referrals can be valuable.

4.4 Prepayment, Risk Sharing, and Private Financing

In the financing schemes discussed so far, individuals pay for goods and services as needed. The sick pay the most; the healthy pay little or nothing. An alternative is to pay for all services in advance of need and to share costs equally (or on the basis of actuarial risk) among all group members regardless of individual use. Such risk-sharing plans differ largely by the degree to which they link payments and services.

Alternative risk-sharing systems include insurance plans and health maintenance organizations (HMOs) or other prepayment plans. In insurance plans, the insurer bears the cost of overuse, so the provider has no incentive to be economical. With HMOs, however, the provider bears the risk of overuse, leading to more economical

service delivery.

Stinson (1982) in his review of financing schemes found that most of the 31 prepayment schemes studied also included a fee-for-service copayment element; most also charged for drugs. Prepayments were on either an individual or a household basis. Cash or in-kind resources were collected directly from beneficiaries or through a levy (payroll tax), or in some cases, the surplus from an economic enterprise was used to subsidize the payment of health workers.

One way to finance such programs is to raise money through a cooperative or productive scheme, with the profits going to support the community health program. However, the organization and management of such schemes have proved difficult. And, in poor communities, it may be difficult to raise funds from within the community.

In subsistence economies, prepayment schemes are vulnerable to economic misfortune. To be sustainable, projects need a backup reserve. In Indonesia, the Dana Sehat project is based on a communal credit union. Surplus funds go into the credit union, and credit union loans are used to make up for financing short-falls. Other programs rely on external sponsors to make up deficits.

When combined with a full-service system, prepayment schemes work much like HMOs in developed countries. A.I.D.'s Bureau for Latin America and the Caribbean has focused particularly on social insurance, social security mechanisms, and the development of HMOs.

The Bureau for Africa now supports research on alternative ways of mobilizing public and private sector financing of primary health care services. This includes the use of PL 480 funds, the establishment of user fees, and the development of prepayment plans.

Alternative financing arrangements are the subject of a number of applied research projects financed by A.I.D. In Benin and Zaire, fee-per-illness plans are being compared with fee-per-visit plans, fixed consultation fees, and variable fees for drugs. Revolving drug funds are being studied in Thailand and the Dominican Republic (Tinker, in Evans 1985, 36-37). These applied research projects range in scope and breadth from studies of the development and implementation of fee schedules, assistance in HMO development, the efficiency of hospital services, and the establishment of revolving drug funds to involvement of the private sector and public/private collaboration in health service delivery. Projects such as the Resources for Child Health project (REACH), Resources for Primary Health Care project (PRITECH), and Primary Health Care Operations Research project (PRICOR) are examples of A.I.D.'s applied research efforts in alternative health financing schemes. A.I.D. assistance in such efforts is found within each region and in more than half

of all A.I.D.-assisted countries. The results, which are just beginning to come in, will assist in the design of future projects.

Several countries have expressed interest in mechanisms such as HMOs and other prepayment programs. A.I.D. is assisting the Philippines, the Yemen Arab Republic, Tunisia, Turkey, and some Latin American countries in their quest for large-scale financing alternatives (Tinker, in Evans 1985, 39).

Chile has a growing nationwide HMO, which suggests that prepaid health care can work in a developing country if certain conditions, such as the following, are met:

- A strong government policy supporting a new conceptual model of health services delivery
- A government that is eager to curtail its health care expenditures
- Physicians who support the HMO concept and who are willing to work in a structured system
- A market of interested employers and employees
- An increasing number of physicians who are competing for patients and who are therefore receptive to new forms of delivery and payment
- A population familiar with pension funds, social security, and prepayment plans for health care
- Competition between traditional insurers and HMOs
- A significant population base to support HMOs
- Incentives to encourage local and foreign investment in HMOs
- An economy that allows effective cash-flow management, such as prepayment "floats"
- Expertise in effective data management for financial and management decision-making
- Management skilled in finance, cost control, budgeting, marketing, and negotiation
- Marketing expertise, especially where the HMO concept needs to be communicated to a new audience

The Chilean HMO covers about 10 percent of the population, including employees of a large bank, the armed services, and over a million private subscribers. One reason for the success of the

Chilean project is that the Government requires that a percentage of employees' salaries (6 percent in 1984) be deducted to pay for health care. The employee can choose the national health care system or the private HMO.

A formal study of the Chilean experience was carried out by Health Central International for the A.I.D. Bureau for Private Enterprise (Rice 1985). Also, the Group Health Association of America carried out a study for A.I.D. of HMOs in Latin America and the Caribbean (A.I.D. 1985b). There is disagreement on whether the government should establish and administer the HMO. Although political stability and strong government support are clearly critical to the success of HMOs, some senior HMO officials in the United States believe that private enterprise is more efficient and cost-conscious and therefore better equipped to manage HMOs, both in the United States and abroad (Group Health News 1986).

Although the evidence is still coming in on HMOs for developing countries, it appears that these organizations can provide high-quality health care to the more affluent 10-20 percent of the population in middle-income countries. Because most HMOs depend on salary deductions as a source of revenue, and most poor people do not hold salaried jobs, it is unlikely that HMOs can resolve the health problems in developing countries. However, when those shifting to HMO's or other prepaid schemes were previously users of free government services, some of the strain may be taken off government health budgets, allowing more public health services to be provided for the poor.

The proper role for A.I.D. and other donors in the promotion of HMOs has yet to be worked out. On the one hand, HMOs do promote private enterprise and private sector involvement in health care; on the other hand, they do not serve the poor who are the target of A.I.D. programs. A.I.D.'s strategic approach encourages studies and project designs that use alternative consumer financing schemes (A.I.D. 1984, 7).

The lack of good information on various financing mechanisms has prevented the development of guidelines on what works, where, and why. However, the interest in research and documentation in this area is high, and several studies or experiments are underway and are enthusiastically supported by A.I.D. (A.I.D. 1986b, 5).

5. COMMUNITY PARTICIPATION

The standard model for primary health care projects is one that strongly emphasizes community participation. A community health committee is responsible for selecting community health workers, managing the health center, identifying community health problems, and making decisions that affect how the program will be run.

There are few concepts in development so undefined, yet so frequently used, as community participation. In the classic community development model, all projects begin in the community with a realization of some pressing need; then an inventory of resources available and needed to resolve the problem is undertaken, and possible solutions are discussed until one is agreed on.

In fact, in most development projects participation occurs through committees. An organization (the ministry of health or perhaps a private voluntary organization) decides to start a health project in a community. This organization has already decided the basic form the project will take, and it selects a committee to rubber stamp its decisions. The committee is usually allowed to make some minor decisions, but the overall framework of the project is handed down from the government or the development organization.

This model of development assumes that a committee is some natural form of social organization and that it has some inherent quality of representativeness. In fact, committees are a very Western (democratic) mechanism of decision-making, and one that is alien to many autocratic or lineal societies. Forming a committee of individuals who actually represent the diverse interests of the community may be a major sociological task in itself. In cultures where committees are an imposed form of social organization, it may take years for committee members to learn the give and take required to make a committee effective.

In most traditional societies, the very idea of participation is foreign. Decisions are made by government officials or lineage elders and passed down. Helping people understand that they need not be passive victims of illness, that they can work together to resolve some of their problems, is not accomplished overnight.

Another problem is that committee members are frequently asked to perform tasks for which they have no training or to take responsibility in areas in which they have no experience. Health committees are asked to raise funds, supervise health workers, manage revolving drug schemes, monitor receipts, and order medical supplies. Yet they rarely have experience in these tasks, and they receive little training or assistance.

The other type of participation in most development projects is in self-help activities. For example, community members volunteer to construct the health post, dig drainage canals, or lay water pipes.

There is an inherent contradiction between true participatory development and that imposed by an agency. Projects undertaken by A.I.D. and other donors (including many private voluntary organizations) are top-down projects regardless of the number of committees and self-help components added. True participation takes time to plan and put in practice, and this is difficult over the

short time span of a typical A.I.D. project.

Participation, in its classic definition, cannot be mandated as part of a project plan, but project plans can assign certain roles to certain individuals or groups within the community.

Confusing participation with the involvement of citizens in some aspects of a project can lead to problems. As Parlato and Favin point out, "it often seems as if project planners expect participation to develop spontaneously. Generally, insufficient attention is given to the significant effort and deliberately slow pace required to gain a community's trust and support" (1982, 34).

In their review of 52 primary health care projects, Parlato and Favin (1982) found that few communities were even asked whether they wanted the projects. The communities rarely had a role in defining the major features of the program. Few communities have any experience with primary health care programs, and they can usually contribute little to the overall design.

Despite these problems, community involvement in the health care system is still an integral part of the primary health care model. Although project plans always give prominence to community participation, it is not easily achieved. "Communities sometimes contribute land for health centres or health posts, or even some labour, but this tends to be all. Local 'health councils' may be organized to oversee health affairs, but they seldom function. In Benin, health councils have been organized at several levels--local, district, and province--but after initial enthusiasm, interest dwindled" (UNDP 1983a, 18).

Parlato and Favin point out some of the problems inherent in trying to incorporate community participation in health care projects:

In many projects, these general objectives of popular participation have not been translated into clearly defined activities on which project staff can focus and which can be verified and evaluated. Although certain expected forms of participation (e.g., the selection of health workers and the formation of health committees) are well-defined, neither communities nor project personnel may have precise ideas about what they should do or what they should expect from general community participation goals, such as communities actively seeking solutions to health problems.

Project evaluations reveal a definite pattern of results from community participation. Generally, community support of specific and concrete functions and activities (e.g., health hut construction or provision of labor for water projects) has been successful, but other kinds of

activities have not. Communities tend to support activities but not initiate them (Parlato and Favin 1982, 29).

The most effective program design for community involvement is one that responds to a request from the community for some type of program. Then, the community should be involved in specific activities and decision-making where possible. For example, the community can select sites for health posts, set health-post hours, and advise on project priorities. However, committees may not be the best way to monitor a project, and culturally appropriate forms of management should be explored. Community involvement is a progressive activity that develops as individuals' skills in program design and management grow. The more responsive a program is to community needs, the more quickly and effectively will community members find ways of supporting it.

The importance of participation to project sustainability depends on the program model being implemented. For vertical, categorical programs, such as immunization, vector control, and oral rehydration, there is ample opportunity to encourage people to participate in implementing a specific project, but most plans are probably made at higher governmental levels.

An aspect of participation that is often overlooked is how to create demand for services. The most effective use of social marketing strategies has been in distributing contraceptives (Binnendijk 1986a). Many of the same principles are now being used to create demand for oral rehydration solutions. However, there has been little theoretical or policy-level emphasis on learning more about ways of creating community demand for latrines, potable water, or vaccinations and other health promotion services.

For the classic integrated primary health care system, community participation is essential in both planning and implementing some aspects of the program. It is important that programs begin with the health problems of most concern to the people and, through education, progress to those that initially may not have been seen as problems. For current child survival strategies that tend to be more focused, community involvement may be even more difficult to achieve and perhaps less necessary.

Cost recovery is another important issue that involves participation. People are more apt to contribute (through user fees or community financing projects) when they view the services as valuable and responsive to their needs. The best way to identify and accommodate people's needs and wants is to allow them a voice in determining priorities and implementation methods.

Further research is needed on the roles that community health committees can effectively play. Culturally appropriate alternatives to the committee also need to be identified, and expatriate health planners need to be taught to design projects

around existing social systems rather than to assume that Western models will work.

There are many appropriate roles for community members in carrying out a health program. Individuals and groups can learn more about management and assume greater roles in the decisionmaking process, but major decisions will inevitably be made outside the community.

6. PROGRAM ISSUES: CATEGORICAL VERSUS INTEGRATED PROGRAMS

6.1 The Issues

Integrated, or horizontal, programs are those that deliver a variety of services and are designed to build on, or complement, programs offered by other government agencies. Categorical, or vertical, programs usually have a very limited purpose such as control of a particular vector, have a management structure distinct from other health programs, and have very clear objectives. The distinction between the two types of programs is usually more clear at the senior management level than at the delivery level, where health workers are often responsible for service delivery in both types of programs.

There is a trend away from general health interventions toward programs with more direct methods and objectives. The old community-based primary health care programs aimed to improve health through multifaceted nutrition, education, environmental sanitation, and education interventions. The current Child Survival Action Program offers a more limited but still multifaceted package of services.

Integrated, or horizontal, programs are usually managed by several individuals within the ministry of health. Horizontal organization requires great effort to coordinate ministerial units at the national level, but it reduces coordination problems in the field. Integrated programs seek to achieve specific objectives through a multifaceted approach. Most primary health care projects were directed toward women of child-bearing age and children under 5 years of age. The Child Survival Action Program uses stepped-up funding for those categorical programs that seem to have the greatest impact on infant mortality.

Management problems in working with integrated, community-based programs are not limited to A.I.D.'s programs. The UNDP also finds that broad, multipurpose types of projects "are proving to be the most problem-ridden and difficult to manage" (UNDP 1983b, 14).

Community-based programs, whether general primary health care programs or more focused child survival efforts, are frequently most successful when carried out by the smaller development organizations (private voluntary organizations) that have the staff

and dedication to work with communities over several years to provide health and management training and, most important, to establish the program in the community. The most successful and sustainable projects have been relatively small in scope and have emphasized community involvement in both planning and implementing the projects. With primary health care projects, those designed to strengthen and expand existing services were most effective and sustainable (Danforth 1986b, 25). The role of the community in sustaining child survival programs has not yet been worked out.

Because the staff of private voluntary organizations enjoy the confidence of their clientele and work closely with them in the community and because their projects are small, their programs seem to work better than large-scale government programs. However, many of these projects are difficult to duplicate or expand beyond their immediate scope (A.I.D. 1985a, 23).

Categorical, or vertical, programs are usually much larger in geographical scale (frequently nationwide) than integrated programs because they target a specific cause of morbidity or mortality. Vertical programs are generally managed by a single unit of the ministry of health, with its own budget, personnel, and logistical services. Common categorical programs include vector control (malaria, onchocerciasis, and schistosomiasis), immunization campaigns, water and sanitation, family planning, oral rehydration, and vitamin A distribution.

In developing countries, where ministries of health may be underfunded, poorly organized, highly politicized, or held in low esteem, vertical programs are easier to manage than integrated programs, and their effectiveness is easier to assess. However, if too many vertical programs are established, efforts are duplicated and resources are wasted. The cost-effectiveness of the different approaches has yet to be assessed adequately. "While the selective approach is appealing, it should be cautioned that cost-effectiveness evidence for different interventions is still spotty and data found to hold in one or two locations cannot be generalized worldwide. Furthermore, even a low-cost program which is very effective in lowering mortality may still be beyond the means of government health ministry budgets" (Binnendijk 1986c, 6).

There are important questions about the future of categorical programs. Preliminary results of the Lieberman and Miller study (1986) suggest that when compared to horizontal programs, vertical programs tend to be more sustainable. However, a different set of problems arises when a developing country tries to merge a successful vertical program with a horizontal program. The majority of efforts to merge these programs have not been successful. This usually happens with the integration of a successful program (that has highly motivated workers and plentiful resources) into a program that lacks resources, motivation, and purpose.

Vertical programs are often sustained over very long periods (e.g., the Indonesia malaria program and the West African onchocerciasis program) not because of funding by the host country but because of continued funding by multilateral and bilateral donors. They may be said to endure, but does ensured outside funding constitute sustainability?

The differences between the two types of programs are not as distinct as the literature sometimes suggests. Categorical programs are often carried out through existing primary and curative health programs. Some primary health care programs focused on two or three areas such as immunization, oral rehydration, and environmental sanitation even before the recent Child Survival Action Program initiative.

The large body of literature on the pros and cons of integrating family planning programs with other health care programs is not reviewed here. The issues are the same as those arguing for and against the integration of immunization, vector control, and other vertical programs.

6.2 A.I.D. Policy

A.I.D. policy since the beginning of the decade shows a progression from general primary health care projects to those with a stronger categorical thrust, such as in the Child Survival Action Program (oral rehydration therapy, immunization, nutrition, birth spacing).

In 1982, A.I.D. policy stressed the broader, integrated approach. A.I.D. aimed "at institutionalizing more universal coverage with a minimum [primary health care] package, and then to expand the content of the program as resources permit" (A.I.D. 1982, 4).

The "minimum primary health care package" included the following:

- Growth monitoring, nutrition education, and the promotion of breast feeding
- Supplementary feeding for the severely malnourished
- Prenatal screening for high-risk mothers and supplementary feeding if needed
- Oral rehydration programs
- Family planning programs
- Basic immunization of infants and children

- Emergency treatment for injuries and basic first aid
- Medicines and supplies to carry out these services

In some circumstances, disease control programs that are separate from [primary health care] activities may be warranted; however, to be effective, these programs should be sustained rather than isolated campaigns and clearly linked with planned or existing [primary health care] programs.... Other elements of a more comprehensive health program, such as water and sanitation, should be included only when financial resources and support systems are adequate (A.I.D. 1982, 5).

Since the mid-1970s, many developing countries have started primary health care programs. Primary health care is the official policy in 78 of 122 countries surveyed by WHO.

India has trained 340,000 health guides and volunteers, for example, and Thailand has trained 384,000 health communicators. In Tanzania, almost every village now has one health post attended by a trained person; in Botswana, 80 percent of the villages have village health committees; in the Republic of Korea, 2,000 community health practitioners will be available to two-thirds of the population by the end of 1985. In Burma, 13,000 community-based health workers are being trained in five years (UNICEF 1984, 13).

However, there has been discouragement with the general primary health care program. There is an impression that most primary health care programs try to do more than they can realistically accomplish with community health workers and limited support resources. For these reasons, A.I.D. health initiatives now target more categorical programs.

The 1984 A.I.D. Health Sector Strategy retained the emphasis on a basic package of proven, cost-effective technologies delivered in primary health care programs. But the effectiveness of certain interventions gave them a stronger place in the evolving policy. "The agency encourages immunizations, oral rehydration therapy, family planning, and nutrition monitoring as the most immediately available, effective means to reduce infant and child deaths. Transfer of cost-effective technologies to control major communicable diseases, particularly malaria, is also a strategic priority to enhance labor productivity. In many settings, water supply and sanitation may promote both health and productivity..." (A.I.D. 1984, 1-2).

The A.I.D. primary health care strategy (A.I.D. 1984, 1-3)

emphasized the following:

- Immunization
- Oral rehydration
- Family planning Nutrition (with growth monitoring and use of PL 480 food)
- Control of infectious diseases
- Health education
- Water and sanitation

Despite the policy emphasis on primary health care, categorical programs played an important role in A.I.D.'s health activities. In a study reviewing 47 A.I.D. health projects completed during FY 1984, nearly half were categorical programs concerned with water and sanitation, vector control, family planning, and oral rehydration therapy. Table 1 shows the distribution of these projects by region and primary emphasis.

Table 1. Distribution of 47 Health, Nutrition, and Family Planning Projects Reviewed in 1984, by Region and Primary Emphasis

Project Emphasis	Africa	Region			Total
		LAC	Asia	Near East	
Primary Health Care	6	7	2	0	15
Water and Sanitation	1	1	1	3	6
Institutional Development	1	3	0	1	5
Research and Training	1	2	1	1	5
Onchocerciasis Control	1	0	0	0	1
Malaria Control	1	0	1	0	2
Vaccination	1	0	0	0	1
Population	0	8	1	1	10
Oral Rehydration Therapy	0	0	1	0	1
Blindness Prevention	<u>1</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>
Total	13	21	7	6	47

Source: A.I.D. 1985c, 44-50.

The most recent health Policy Paper focuses on only four child survival strategy interventions (immunization, oral rehydration therapy, birth spacing, and nutrition). "Other types of health assistance will also be supported, where warranted to meet country-specific objectives" (A.I.D. 1986d, 1). Community-based programs or community health workers are not mentioned in the new policy. There is a strong statement on the importance of the institutionalization and sustainability of the services. The Child Survival Action Program, A.I.D. believes, will provide a basis for more comprehensive primary health care services.

6.3 Impact

A recent review of impact evaluations of seven A.I.D. health projects found that the evidence for impact is elusive. The three projects that most successfully demonstrated health impact all had serious sustainability problems. Those that appear most sustainable have demonstrated no impact. The more resources put into monitoring, the greater the likelihood that impact is demonstrated (Buzzard 1987).

Blumenfeld and Pipp (1985) have reviewed the issues in A.I.D.'s health sector evaluations. They have recommended a systems approach to evaluation and have set forth a protocol for evaluating A.I.D. health projects that would make evaluations more comparable across countries.

Measuring program impact is difficult. In classic primary health care programs, the communities are often also beneficiaries

of agricultural, small business, and other development activities. Baseline studies are difficult to carry out; routine data collection may not be reliable; there may be no control groups for comparison; and political and economic conditions may change during the life of the project. Even in cases where impact can be reliably demonstrated, it is difficult to say which intervention caused the change in morbidity or mortality. The impact of a nutrition or education program may be subtle and unmeasurable for many years. Thus measuring the impact of integrated programs can be difficult and frustrating.

Categorical programs have more discrete objectives, and their impact is easier to measure. Formulas can be used to calculate the number of lives saved or the incidence of illness reduced for the number of children vaccinated, the number of acres sprayed with insecticide, or the number of family planning program acceptors. This sometimes makes categorical programs more appealing. Within A.I.D. and for budget justification to the Congress, the impact of categorical programs can be demonstrated with greater confidence than that of integrated programs.

6.4 Community-Based Integrated Primary Health Care

"Few worthwhile studies have been conducted concerning the effects of health service on health, and those that exist are difficult to evaluate. In some cases, concurrent improvements in water supply, sanitation, or housing have not always been fully taken into account, or nutrition may have improved, but its effect has not been identified" (World Bank 1980, 27).

As long ago as 1978, the National Academy of Sciences warned A.I.D. that integrated primary health care projects, while "internationally fashionable," were not practical. A committee of international health professionals "was not aware of any strong evidence that this approach has been demonstrated to be clearly cost-effective and ready for widespread and relatively rapid replication." The committee argued that "the development of a system directed toward multiple objectives vastly increases the complexity of the task while sharply reducing its probable successful implementation.... In the committee's judgment, it may make sense in some situations to develop an operative structure for the execution of one or two functions, gain experience and the trust of the recipients, then add an additional function, and later yet another" (Rogers et al. 1978, 9-11). The committee recommended that categorical programs continue to play a key role in A.I.D.'s health programs.

The arguments against integrated programs may have as much to do with demographics as with other variables. One strong opponent of integrating family planning with other health services admits that "when there is a population of high density guaranteeing a numerically important demand for specialized services, verticalism

will be the most efficient response.... In the extreme perimeter where population is scarce and demand very small and an effort is made to establish contact with those human nuclei, the focus must be horizontal. It would be ridiculous to travel five hours going and as many returning to talk for ten minutes about contraceptives and to distribute a few cycles of pills and a dozen condoms" (Trias 1980, 40).

Clearly, integrated and categorical programs are not an either/or proposition. Much depends on local conditions, available resources, and the severity of the need for a particular type of intervention. The current Child Survival Action Program is an effort to tap the best of both approaches.

6.5 Focusing Primary Health Care on Specific Interventions: The Child Survival Action Program

The World Health Organization (WHO 1978, 11) has urged that the control of acute diarrheal diseases be integrated with an overall health strategy. A.I.D.'s Child Survival Action Program is an effort to focus primary health care on specific interventions to reduce mortality among children. In FY 1985, \$85 million was allocated for this program. The program emphasizes oral rehydration therapy (about 35 percent of the funds); other funds are for immunization (21 percent) and nutrition (18 percent). The remaining 26 percent of the funds are for family planning, treatment of respiratory infections, vector-borne disease control, and water and sanitation projects. The Child Survival funds aim to give A.I.D.'s health programs a sharper focus (A.I.D. 1986a).

The Child Survival Action Program is new, and there is as yet no evidence of how effective it will be. The program is accompanied by a three-tiered evaluation system: all projects collect data on some basic indicators, a smaller sample collects data on a wider range of indicators, and a few carefully chosen projects will include intensive evaluation components (A.I.D. 1985). A.I.D.'s new health policy (A.I.D. 1986d) places little emphasis on community-based programs or on integrated service delivery. Rather, it places even more emphasis on categorical programs, although these services are to be delivered through existing community health service systems.

6.6 Categorical Programs

Categorical programs have specific objectives and often have a separate management system within the ministry of health or the ministry of water. The most common categorical programs are vector control and immunization campaigns, which are discussed here. Family planning programs are also typically categorical programs. The current child survival thrust involves four categorical programs, but these programs are being carried out in collaboration with primary health care programs.

6.6.1 Vector Control

The distinction between integrated and categorical programs often blurs at the delivery level where community health workers or clinic staff are responsible for both types of services. However, vector control and immunization programs often are distinct at the national level.

The earlier review of the history of A.I.D.'s health policy emphasized A.I.D.'s long struggle against malaria. The battle against other vector-borne diseases has also been important.

Serious vector-borne diseases are endemic throughout whole regions of the developing world. Malaria, which has experienced a resurgence in many countries, is a major factor contributing to death and disability. Approximately 850 million people live in areas where malaria is a threat in spite of malaria control efforts; another 345 million people live in areas where malaria is endemic, but control efforts are ineffectual or nonexistent. Trypanosomiasis (sleeping sickness) has once again become a serious problem in Africa; the Latin American variant of trypanosomiasis (Chagas' disease) remains endemic in Central and South America, and there is no satisfactory treatment. Onchocerciasis, endemic in West Africa, is responsible in part for the abandonment of fertile lands and inhibits cultivation in potentially productive areas. Finally, schistosomiasis (snail fever), a gradually debilitating disease found in varying forms in many parts of the developing world, is believed to afflict 180 million people in [developing countries]. Schistosomiasis spreads rapidly in areas with irrigated agriculture, sapping the energy of the very population that [irrigation] is intended to benefit... (A.I.D. 1982, 2).

Malaria is particularly a disease of the rural poor and the uneducated. It is relatively easy to treat and is sometimes considered to be a mild illness. Malaria control may be a low health priority for those who fail to understand the seriousness of its consequences. It is difficult to convince uneducated people of the cause-effect relationship between the mosquito vector and the onset of symptoms. Consequently, it is difficult to explain the rationale for using a variety of mosquito-control measures. Successful malaria control, however, must combine spraying, environmental measures to eliminate breeding sites, and the acceptance by patients of antimalaria medication (Foster 1982, 16).

Programs distributing chloroquine for malaria prophylaxis were initially successful. The incidence of malaria in Sri Lanka probably dropped from 1 million in the 1950s to only 17 in 1963. Then, malaria made a comeback as mosquitoes transmitted new

chloroquine-resistant strains of malaria. Sri Lanka reported 150,000 cases of malaria in 1984, but the actual number was probably four times that. Some of the most lethal forms of malaria are now chloroquine-resistant. Fansidar, the drug used for chloroquine-resistant strains, is losing its effectiveness in some areas where it has been used widely. Vaccines are forthcoming for malaria, but the best solution for controlling the disease is mosquito control through insecticides, larvicides, biological control agents, breeding-site reduction, mosquito nets, and other measures that will not lead to the further spread of drug-resistant strains of malaria (A.I.D. 1986a, 39).

Onchocerciasis, or river blindness, affects one out of five adults in some parts of West Africa. The disease is spread by black flies, and aerial spraying has brought it under control in some areas. Like other types of vector-control programs, onchocerciasis programs are often vertical and based on a combined use of chemicals and behavior modification.

A recent assessment of a major onchocerciasis control program in West Africa has found very impressive results. The program, started in 1974 under the sponsorship of WHO, the World Bank, the Food and Agriculture Organization, and UNDP, initially covered parts of seven countries. A.I.D. has been the largest single contributor to this fund, contributing 13.7 percent of the total budget during the first two phases (1974-1985); the World Bank has been the second largest contributor (11 percent). As it moves into its third and final phase, supported now by 22 donors, it will cover 11 countries. At a cost of over \$300 million dollars, the program has prevented 27,000 cases of blindness in one country alone. It has also freed 15 million hectares of land for cultivation in areas where the transmission cycle has been interrupted (Kelly et al. 1986).

A.I.D. policy calls for continued, but limited efforts in vector control, particularly when the biotechnology allows feasible methods of control. This would include, particularly, onchocerciasis, schistosomiasis, malaria, and guinea worm infection (A.I.D. 1986d, 23)

6.6.2 Immunization

The smallpox immunization program began in 1967 and, because of its success, was an inspiration for all later immunization programs. Within 10 years, the disease was completely eliminated. One reason for the successful eradication of smallpox is that the freeze-dried vaccine does not require refrigeration. This enabled health workers to vaccinate people who lived in very isolated areas where refrigeration was not available.

The need for continuous refrigeration (the "cold chain") is an ever-present problem in most vaccination campaigns (in addition to

ensuring an adequate supply of vaccine on the required dates). Keeping the vaccine at the proper temperature is essential to its effectiveness. Vaccines differ in stability and refrigeration requirements; therefore, keeping vaccines at the required temperature from the factory to health centers and storing them in areas without refrigeration can be a major logistical problem.

In 1974, the World Health Assembly of WHO voted to establish a permanent Expanded Program of Immunization as a component of all primary health care programs. A later resolution by the same body called for immunization of all the children of the world by the year 1990 as a milestone toward "Health for All by the Year 2000." The objectives of the Expanded Program of Immunization are as follows (de Quadros 1983, 7):

- To reduce morbidity and mortality from diphtheria, pertussis, tetanus, measles, poliomyelitis, and tuberculosis by vaccinating every child in the world by 1990
- To promote countries' self-reliance in delivering immunization services by integrating them with an established comprehensive health program structure, where such care already exists
- To promote regional self-sufficiency in vaccine production, quality control, and distribution

A.I.D. lends major support to the Expanded Program of Immunization through contributions to WHO and other international agencies and through funding of immunization programs in more than 50 countries. "Immunization projects need to pay much more attention to the demand side of the equation. Existing services are underutilized and could probably handle double or triple the vaccinations they are now giving if they were upgraded (for example, with more reliable means of keeping vaccines cold) and became more aggressive in recruiting clients" (A.I.D. 1986c, 16).

Efforts to integrate immunization programs with the established health program structure frequently fail.

One method of integrating immunizations into primary health care has been the simple addition of immunizations to the list of tasks which primary health care workers are expected to perform. Experience from the field shows that this facile and superficial approach does not work. Successful broad coverage immunizations on a continuing basis (as new infants enter the population) are more complex to organize than many planners realized. Besides sophisticated logistics and substantial supervisory requirements, they require disease surveillance and record-keeping to ensure successful completion of immunization series (Sabin and Stinson 1983).

A study of eight primary health care projects in Africa found that "Mali's planned [immunization] activities in Koro Health Center and through the mobile team were canceled due to late arrival of UNICEF equipment. In Mauritania, three-fourths of the A.I.D. health project budget is for vaccinations, and coverage of children fully immunized is 30 percent in the major region of project coverage, the highest in the country" (A.I.D. n.d.C, 2).

In Afghanistan, vertical programs for smallpox eradication, malaria control, and the training of traditional birth attendants were more successful than integrated programs. Efforts to integrate the immunization program into a system of basic health care were unsuccessful (O'Connor, quoted in Sabin and Stinson 1983, 25). Other countries have also had success with vertical programs. Colombia vaccinated 800,000 children during one National Vaccination Day. Brazil vaccinated 2 million children on two separate National Vaccination Days (UNICEF 1984, 7-9)

For rapid coverage, vertical immunization programs are the most efficient and effective. Over the long term, however, immunization programs must be integrated with other health services because few developing countries have the resources to maintain personnel and support for one health activity.

Immunization, along with oral rehydration therapy, forms one of the major thrusts of A.I.D.'s Child Survival Action Program. A.I.D.'s objective is to immunize 80 percent of the children in A.I.D.-assisted countries by 1990. The strategy is to vaccinate children under 1 year old and women of child-bearing age against six diseases. Special emphasis is placed on immunization of children against measles (which is a major killer of infants) and on tetanus immunization for women (A.I.D. 1986a, 1-2).

7. MANAGEMENT ISSUES: PROGRAM IMPLEMENTATION AND RESOURCE ALLOCATION

Programs cannot be sustained without skilled personnel to plan, manage, and implement the programs. The lack of economic and human resources plagues health programs in all countries. When a country with limited economic resources, few trained personnel, a stagnant or inefficient bureaucracy, and limited infrastructure (roads, communication systems, supplies) tries to provide health services to the very poor in remote areas, it will inevitably find it difficult to plan, implement, and maintain that program. This is exactly what is happening in many developing countries.

Over the past 10 years, A.I.D. and other donors have urged developing countries to place more emphasis on primary health care. The model based on community health workers was widely adopted. In countries where primary health care was encouraged, A.I.D. assisted with startup costs and technical assistance for planning. Usually, both A.I.D. and host country personnel seriously underestimated the

recurrent costs for maintaining extensive networks of community health workers, secondary and tertiary referral systems, transportation, and communication.

Management problems are inevitable when a program is planned both from the top and the bottom, and most primary health care projects are run exactly that way. On the one hand, the primary health care model values community participation and calls for local committees to manage their own programs. On the other hand, community health workers require logistic support, supervision, and backup from a national network of clinics, hospitals, and physicians. The difficulties are compounded because these support systems are not oriented toward primary health care and because decisions are passed down from policymakers and managers at senior levels of the ministries involved. When decisions about programs are made at the top by curative-oriented ministry of health officials and at the bottom by unsophisticated community health committee members, conflicts occur.

Given the circumstances in which most primary health care programs are attempted, it is perhaps surprising that they have been successful at all.

7.1 Program Planning and Management

The UNDP (1983b, 10) finds that almost all health programs in developing countries suffer from weak health system management. Overcentralization of decision-making and trained personnel, lack of an effective incentive system for rural service, counterproductive personnel policies, and inadequate information and data flows are some of the common problems. In addition, coordination and cooperation among ministries of health, agriculture, sanitation, and other health-related government organizations are lacking. Poor logistics hamper the distribution of drugs and other supplies. Because of a shortage of fuel or maintenance parts, vehicles are often unusable. The World Bank has found that

the most persistent problems in improving health do not result from the complexity of medical technology, and only partially from the scarcity of financial resources; rather, they derive principally from problems in the design and implementation of policy, management, and logistics. The obstacles most frequently encountered by the Bank in its lending for health components are

- Lack of sound, long-term planning, particularly for the financing of recurrent costs, and for the coordination of program elements
- Limited capacity for implementing new programs

- Inconsistencies between new health programs (especially for training paramedical workers) and existing laws and regulations
- Inadequate methods of procurement, distribution, and control of drugs and pesticides
- Insufficient and poorly managed transport
- Poorly designed curricula for training health manpower and insufficiently prepared procedures for clinical care (The World Bank 1980, 8)

These are obstacles for the Bank, which has extensive financial resources. For the country, lack of resources may be offset very little by improvements in management or other areas.

A.I.D. has found that the "major factors contributing to poor management and administration include hasty deployment of health workers before adequate managerial systems are installed; a widespread shortage of personnel trained to undertake various management functions; and institutional inflexibility and reluctance to adopt new management functions and approaches" (A.I.D. 1982, 5).

Earlier A.I.D. policy was to provide technical assistance in effective management by supporting in-country training programs in management and planning and in training for trainers in management (A.I.D. 1982, 5). Current policy is to select countries whose management and resources make the child survival strategy most feasible. "Inadequate planning, lack of infrastructure, and insufficient trained manpower ... constrain the ability of countries to effectively program available donor assistance and locally available funds. The existence of such constraints has been taken into account in the selection of a limited number of countries for major child survival programs" (A.I.D. 1986d, 19).

Under its earlier Health Sector Strategy (1984, 6), A.I.D. called for the development of better management capability for designing and implementing better primary health care programs. The current emphasis on tighter management and more vigorous resource allocation is aimed at cost containment, sustainability, and institutionalization. Health programs will not be approved by A.I.D. unless management needs have been adequately assessed and actions identified to resolve deficiencies. A.I.D. provides technical assistance in planning and project design, financial management, supervision, logistical support, and information and evaluation systems (A.I.D. 1986b).

Buzzard's (1987) review of health and nutrition impact studies on projects in seven countries found that virtually every evaluation indicates significant problems in internal organization and management, particularly in relation to the development of

health systems. Problems of logistics, supervision, and the collection and use of information are universal. Furthermore, programs suffer from lack of clear, measurable objectives.

The background statement for A.I.D.'s health programs in Africa indicates similar problems:

- Lack of effective management, local financing, infrastructure, logistics, communications, referral systems, cold chains, and planned targeted interventions
- Inadequate planning and poor management
- Lack of trained manpower
- Lack of research on cost-effective methods of preventing and treating common communicable diseases (A.I.D. n.d.a, 5)

These serious management problems, however, have not rendered all programs ineffective. A review of eight primary health care projects in Africa found that "even a minimum of health infrastructure can deliver the simpler health technologies, oral rehydration, and immunizations to many persons previously underserved" (A.I.D. n.d.C, 1).

The A.I.D. Bureau for Latin America and the Caribbean reports that "management problems continue to impede effective health and water service delivery. Adequate systems of planning and management, transportation, logistics and drug supply, supervision, referral, and data collection are frequently lacking in LAC health systems" (A.I.D. n.d.b, 2).

One response to the problems of managing the delivery of health services in developing countries has been an increase in operations research and systems analysis. Primary Health Care Operations Research (PRICOR) has carried out 49 studies of management problems in health delivery systems overseas and anticipate carrying out additional studies over the next 3 years. Such research enables program planners to identify weaknesses in program delivery systems and to recommend culturally appropriate ways of strengthening the system. A summary of PRICOR's findings to date is in preparation. Other projects such as Resources for Child Health (REACH) and the Health Care Financing project of the Bureau for Latin America and the Caribbean will provide information and resources.

The APHA review of 52 A.I.D. projects found that project support services were a major problem. Programs generally do well during the first years as health posts are constructed, health workers are trained, and initial supplies are provided. However, governments often underestimate the costs of maintaining the

system, and national funds are limited and may be needed elsewhere. "Government management capabilities generally are weak to begin with, since in many countries the administering agency for the [primary health care] project has too few trained management personnel" (Parlato and Favlin 1982, 15).

The study found that a deteriorating economic situation is the major management and support problem affecting governments' ability to fund fuel, drugs, and other program costs. The study also pointed to other problems, which included the following:

- Implementation of programs through highly centralized administrative structures that make change and implementation of new programs difficult
- Lack of basic infrastructure in rural areas such as roads, communication, suitable housing, banking, and other services; shortages of personnel willing to work in rural areas
- Dependence on vehicles that are unreliable because of poor maintenance systems, rising fuel costs, poor road conditions, and difficult geographic and climatic conditions
- Weak systems for the supply and management of drugs because of lack of personnel, inefficient logistics systems, and transportation problems
- Lack of supervision for health workers, which affects the quality of care and leads to high staff turnover and extra training costs. Low-quality care reduces community confidence in the program and lack of community support can lead to many other problems (Parlato and Favlin 1982, 15)

A.I.D. has responded to this lack of conditional planning with a range of options for sustainability by calling for greater fiscal responsibility for projects over the long run (A.I.D. 1986b).

7.2 Appropriate Technology and the Private Sector

A.I.D. programming guidelines call for the Agency to assist the host country in expanding primary health care services through the transfer and further development of selected cost-effective technologies. A.I.D. emphasizes immunization, oral rehydration therapy, birth spacing, and nutrition. PL 480 food supplements, vitamin A therapy, vector control, and water and sanitation projects are also program areas within which low-cost, effective technologies are available and should be used.

A project that combines technology transfer with A.I.D.'s

emphasis on private enterprise is Health Link. Health Link works with health technology companies in the United States and other countries to transfer products, processes, and know-how to private manufacturers in developing countries. Initial funding was for \$1.5 million over 2 years through A.I.D.'s Bureau for Private Enterprise, using Child Survival Action Program funds.

Health Link negotiates joint ventures: assists with licensing, financing, production staff, and obtaining equipment; and helps with auditing and marketing as needed. With initial projects only in Indonesia and Thailand, Health Link is carried out by the Program for Appropriate Technology in Health (PATH). By the end of the first funding period, Health Link had supported joint ventures in the manufacturing or distribution of larvicides, hepatitis-B vaccine, weaning food, rabies vaccines, low-cost eye glasses, X-ray equipment, and intraocular lenses; an antidiarrheals production project is awaiting approval. The Health Link program helps to eliminate some of the problems identified in Latin America, where "comparatively little has been done in the utilization of research methodology to develop drugs, vaccines, or diagnostic methods for the highly prevalent diseases of the developing world" (A.I.D. n.d.b, 2).

7.3 Human Resources

In the industrialized world, the physician and the hospital form the core of a network of skilled health personnel--pharmacists, technicians, sanitation experts, and so on. In developing countries, a variety of traditional healers, herbalists, bone-setters, midwives, and shamans fills the health needs of the population. Only in the last few years have physicians trained in modern medicine been available outside the capital cities of developing countries.

In the United States there is one physician for every 600 people. In Malawi there is one physician for every 49,000 people. In some countries such as Egypt, Turkey, and the Dominican Republic, the ratio of physicians to the population is relatively high for developing countries because of government policy to support physician training. Even then, most physicians still practice in the capital cities, and large rural populations may be completely unserved.

Other technically trained health personnel in developing countries include nurses, midwives, sanitation experts, and various types of technicians (lab workers, pharmacists, and the like). Even with government programs for training large numbers of health care workers, most countries still suffer from serious shortages of health workers and from problems of distributing these personnel throughout the country.

The A.I.D. Bureau for Latin America and the Caribbean reports that the absence of sufficient trained personnel delays the

implementation of key interventions. Planners, managers, and health workers at all levels are scarce and unevenly distributed in the Latin American and Caribbean countries. Training continues to be mostly in curative rather than in preventive medicine and social issues (A.I.D. n.d.b, 2).

Similarly, the UNDP found that for primary health care, "the numbers of health personnel of all types in relation to population are inadequate, complicated by maldistribution of those which do exist. Lack of clearly defined functions of the different categories of personnel, based to the extent possible on written job descriptions, creates problems in their training and functioning" (UNDP 1983b, 10-11).

In some countries, physicians and other health workers are expected to serve 1 or 2 years in rural areas in return for the educational assistance they receive. However, the quality of the care given in rural areas by these often unwilling physicians is frequently a subject of complaint. The young physicians are often sent into rural service right after they receive their degrees, so they lack practical experience, particularly with general medicine in a rural area. They view their service time as something to be endured in penance for their medical training. The physicians are often unsupervised and fail to keep regular clinic hours, sometimes leaving for long visits back home. Many have little interest in the people they serve or in their health problems. The quality of care that the rural people get from such physicians depends entirely on the character and skills of the physician.

A recent review of a project to train nurses, health inspectors, and dental hygienists in Swaziland judged it to be a successful way of training more mid-level health personnel. The evaluation team found the newly established training institute to be viable and dynamic (McGuire et al. 1985).

The response to the widespread shortage of nurses and midwives has been to train relatively larger numbers of assistant nurses or assistant midwives, who are drawn from lower income and rural families. These health workers tend to work for more years and to serve willingly in rural areas, but their technical skills and knowledge may be limited.

Another common problem of health-care training in developing countries is that it is hospital based and curative in orientation. Physicians and nurses rarely have formal training in preventive care or in the social aspects of health. Therefore, even when trained personnel are available for primary health care projects, they have difficulty working in prevent care, and many programs drift into providing more and more curative care (UNDP 1983a, 7-13).

Efforts are underway to design medical and nursing school curricula that include elements of prevention and principles of

primary health care design and implementation. Even at that, teachers with a preventive orientation are hard to find, and teaching materials on health education and prevention are limited.

The proper supervision of community health workers is a major factor in the effectiveness of these workers. Community health workers need regular support and training and a dependable supply of materials to maintain their credibility in the communities where they work. If skilled staff are not available for this important task, the delivery system suffers considerably and may deteriorate altogether (Ofosu-Amaah and Neumann 1979).

8. MANAGEMENT ISSUES: FEEDBACK, COMMUNICATION, AND EVALUATION

A dynamic system of feedback and communication within a health project is critical to its continuation and to obtaining maximum benefits from limited resources. Health supplies, personnel, transportation, and other support are expensive. A good evaluation and communication system can help maximize the projects benefits and minimize the costs.

An evaluation system helps project managers determine how effective their project has been and which approaches are most cost-effective. For example, an evaluation system can help determine the trade-off costs of taking vaccination campaigns door-to-door (costly but effective) and organizing efforts to bring children to health posts for vaccination (less costly but not necessarily less effective). Similarly, a system of feedback from hospital and clinic referrals can measure the accuracy of health workers' diagnoses and can identify areas for further training.

8.1 Communication Systems

Health programs, more than programs in other sectors, require a system of internal controls, records, and feedback. Estimates of usage are needed for ordering drugs. To locate personnel strategically, it is important to know what types of services are needed at health posts and how often. Monitoring the performance of community health workers involves checking the amount of medication they are dispensing, the referrals they are making to clinics and hospitals, and the other services they are performing. Costs of various activities must be calculated so that future activities may be planned.

Communication needs to flow vertically in both directions as well as horizontally. Program planners need to have a continual flow of information from the delivery level so that supplies can be ordered, training arranged, and management decisions made. At the same time, health workers need to know what their colleagues in other health posts are doing and to receive feedback on the quality of the service they are giving.

Data must routinely be collected on certain minimal measures of health (e.g., weight-for-age data on children under 5 years old). Records of referrals, supplies used, and services performed are all essential. However, if too much paper work is required, the quality of the information declines, and the data are not usually tabulated or analyzed. One of the greatest weaknesses in health information systems is in getting the data back to those who can use them to improve the system. But it is a delicate balance between collecting enough information for decision-making and collecting so much that it is not used. Where there is a shortage of staff, bureaucratic inefficiency, weak supervision, and shortages of supplies and vehicles, maintaining a dynamic and efficient information management system is difficult.

An APHA study found that "although provision for an information system is made in almost every project plan, during implementation the system rarely functions as intended and rarely provides the desired data. The information system either breaks down or produces information that is never used. Because it is more detailed than is necessary, produced too late to be of value, or inappropriate given the decisions that must be made, information is often not used. Even useful data may be ignored by those managers who only trust their personal experience or who make decisions for political reasons" (Parlato and Favin 1982, 74).

In a study of eight primary health care projects in Africa, five had explicit health information system components. The design of the forms and the training in their use were considered successful. However, "feedback of information to the field was weak. In one country, Mauritania, information was used to redesign a major project component. In Somalia, multiple systems were developed by different donors and departments of the [Ministry of Health]" (A.I.D. n.d.C, 3).

The conflict between donor needs and project managers' needs has created problems for many projects. Where donors have rigid systems of reporting or, even worse, where there are multiple donors each with different systems of reporting, such conflicts tax already fragile information systems.

The problem of information management is not unique to A.I.D. programs. UNDP found that "proper management also requires a flow of information on the operation of health programmes--information on patients seen, services provided, problems encountered, etc. Seldom do such information systems function efficiently. Sometimes there are printed forms to be used, but they are not filled out. In some higher-level offices receiving such forms, they pile up but are not analyzed" (UNDP 1983a, 32).

Management information systems are important to the efficiency and effectiveness of primary health care projects. Designing an effective system requires a careful analysis of the project to determine who will need what information and to eliminate

unnecessary information collection. A system for the analysis and interpretation of the information must be in place so the information will be both timely and accurate.

8.2 Monitoring Impact and Progress

Ideally, impact monitoring and evaluation are built into the routine management information data collection system. In addition, some donors require major community surveys as baseline studies early in the project. Baseline surveys are costly, time consuming, and require many skilled personnel to construct questionnaires, collect data, and analyze and interpret computer print-outs. In communities with a low level of education, the quality of the data may be poor. The data from most baseline studies are never fully analyzed, and the results are rarely used in designing the program.

If questionnaires must be used, a more economical and responsive method is to carry out mini-surveys on very specific subjects (a questionnaire of one page or less) at times during the project when the data can be analyzed and used most effectively. Alternative data collection methods are generally preferable to questionnaires. Anthropologists have a large repertoire of such methods, and the use of these methods in health care projects is increasing (Buzzard 1984).

Stinson (1983) prepared a manual on health information systems that discusses in detail the issues, problems, and uses of information collection systems. He points out that, when possible, data should be analyzed by those who will use them because they have the strongest motivation for accuracy and completeness. Record keeping does take time, and those at the delivery level (community health workers) sometimes view time spent on records as time taken away from their clients.

Data should be checked for accuracy. Programs may inadvertently encourage workers to over- or underreport certain activities in order to gain supervisory approval. A sample of records should be checked routinely, or health workers observed, to see whether their reports are accurate.

A major issue is whether personal health records should be kept by the family or kept at the health center. Where patient education is a factor, as with child growth monitoring cards, the family should keep the records so that it can take responsibility for the family's health care and so that parents can see the progress of their children's health and growth. If loss or deterioration of records is a serious concern, patients can be given small plastic bags to store and protect the records. Giving the mother her child's record also shows confidence in the mother's ability to take an active role in the child's health (Stinson 1983, 44-45). However, where education is not a factor, it is sometimes best to keep records at the clinic, where they are less apt to be

lost and where health workers can check on appointments and progress.

Parlato and Favin (1982) found that A.I.D. procedures and close Congressional oversight often constrain or delay project approval. Also, A.I.D. bureaucratic procedures for project planning are too often inflexible or inappropriate. Because A.I.D. procedures are followed to the letter during its planning process to justify what has been decided and because bureaucratic procedures and not the project become the focus, constraints and host country realities may be glossed over (Parlato and Favin 1982, 87).

One of the strengths of the new Child Survival Action Program is its three-tiered, uniform system of monitoring project impacts. All countries participating in the program will collect data on services delivered and some impact data on morbidity and mortality. Seven or eight countries will collect additional data for a more comprehensive picture of progress. Finally, a few countries are being selected for in-depth monitoring of a number of variables as well as special studies. The comparability of data will be an enormous step forward in assessing the effectiveness of A.I.D.'s projects (A.I.D. 1985c).

8.3 Project Flexibility and Mid-Course Corrections

The collection of impact data and management information is of little use unless the project has the flexibility to discontinue activities that are unproductive, experiment with solutions to problems, and build on successful approaches. No amount of planning can successfully eliminate all the problems that may occur. A financing scheme, a vaccination campaign, or a mothers club that worked very well in one community may not work at all in a neighboring community. There must be a continuing process of change as a program develops and settles in.

Projects need the flexibility to use the information they collect to make necessary changes in the program. Technical assistance is often ignored or unused because the procedures for making basic changes are so cumbersome. Conflict between technical advisers in the field and A.I.D. staff are common. The quality of evaluation and monitoring systems varies considerably. As Parlato and Favin state, "The need to define better the respective monitoring roles of the A.I.D. mission, the technical assistance teams, and the host governments seems obvious, as does the need for additional health staff in the missions" (1982, 90).

In summary, health information systems are difficult to establish, use, and maintain. Ideally, a monitoring system should chart project activities and impact as part of a routine information collection system. Too often, however, separate monitoring systems, baseline studies, and conflicting requests from

donors bog down an already fragile system. Yet a system that allows communication vertically and horizontally is essential for the maximum use of available staff and other resources.

9. SUMMARY

The purpose of this paper has been to identify the issues related to the sustainability of health benefits, based on A.I.D. and other large donors' extensive worldwide experience in health programs. This summary reviews the issues discussed in more detail in the body of the paper. It also identifies lessons learned so far and points to areas needing more research.

The methodology used to prepare this report was a review of existing documents, mostly secondary and tertiary sources that reviewed several project evaluations. Although working from secondary sources has its limitations, the basic agreement among the sources suggests that the issues emerge as clearly from this method as from an examination of the original evaluation reports.

The theme of the paper is health impact sustainability. For long-term effects on health, benefits must last beyond A.I.D.'s period of sponsorship, and, ideally, health projects should be managed, financed, and carried out entirely by local ministries and communities. Although there is no consensus on which aspects of a program contribute most to project sustainability, a review of the literature indicates that certain criteria are important both for the short-term success and the long-term sustainability of a program. These criteria are financing, community participation, host country policy concerning and direct support of preventive care, appropriate program design, and efficient program management, including effective allocation of human and other resources and an effective system of information collection and use.

Other factors may also contribute to the sustainability of benefits, and the relative importance of those identified in this paper may vary by country or project. A study of the attributes of programs that continue to operate and provide services, including their infrastructure and impact, would be valuable. But until the results of such research become available, the issues emerging from a review of the literature must serve us.

9.1 Financing

Without question, a health program cannot be sustained without ensured long-term financing. Yet developing countries are short of capital, and the cost of health programs, particularly recurrent costs, is routinely underestimated. Means of identifying alternative or complementary sources of revenue have been unstable, inadequate, or politically unfeasible.

Countries with limited financial resources for health programs

must either raise additional revenue through user fees, reallocate money within the government budget, or underwrite part of the expenses by funds raised in the community. Each method involves some problems. It is difficult to start charging user fees when free care has been available, and reallocating funds within the budget involves political considerations.

People appear to be willing to pay user fees for high-quality curative health services but not for preventive services. Even when free health care is available, people often spend money on private practitioners. Pricing of services needs to take into account the full managerial costs of providing both curative and preventive care.

Raising money within a community in support of a health care system has not been successful on a long-term basis. Communities do make important contributions by providing labor, land, and volunteer services, but there has been no effective way of sustaining payments for community health workers unless these workers provide curative as well as preventive care.

Community financial support for health programs is most likely when curative services are provided. While community financing of health programs is a way of recovering some program costs, it is unlikely that user fees or community income-generating projects will sustain a project over time.

Research is needed to find a better way of evaluating community financing schemes. More experimentation with alternative methods of community financing and better documentation of successful schemes would be helpful.

The use of private physicians, midwives, and traditional healers is a potentially cost-effective way of delivering many primary health care services to rural and underserved areas.

Experiments in using traditional healers, midwives, and the social marketing of supplies and vitamins have generally been successful, although such programs have been small. Further research is needed on how best to design programs that can be incorporated within the existing health care system.

Efforts to incorporate private physicians into primary health care systems have not been as successful. Private physicians have not generally been included in program planning. Few physicians are trained in preventive care, they generally prefer urban locations, and many view primary health care systems as unwanted competition to their own business.

The costs of quality primary and secondary care are so high that providing services to people in rural areas strains the budgets of developing countries. Sustainability seems to increase

when all possible care providers are incorporated into the health system. This includes traditional healers, private physicians, traditional birth attendants, and drug sellers.

Health maintenance organizations are being tried in some of the more advanced developing countries. These organizations seem to offer private prepaid health care for the more affluent segments of the population, particularly those in salaried positions. As yet they have not been able to incorporate the poor into their systems. As more countries try prepaid health plans, it is important that their experiences be documented so that experiments for reaching the poor can be designed.

9.2 Community Participation

Community participation is very difficult to achieve in the short time most projects have to get started. There is an inherent contradiction between participation and the top-down design of most health projects.

If a program is to be maintained, it is important that community members have some role in decision-making on health care in their communities. Participation, however, cannot be mandated. Training in health management for civic groups and a health care program responsive to local needs increase the participation of individuals in the program. Mechanisms for increasing the decision-making powers of the community can be built in so that as the skills of the citizens improve, their role in the program will also grow.

The effectiveness of community health committees has been mixed. Alternative forms of decision-making (other than the committee) need to be investigated. More documentation on the process of establishing successful committees is needed.

More research is also needed on the importance of community participation to the sustainability of health care systems. Specifically, different models of participation need to be identified, and the more successful experiences need to be documented.

More research is also needed on creating demand for health services. In family planning, oral rehydration therapy, and some other programs, A.I.D. has experimented with social marketing; however, more information is needed on how demand can be created.

9.3 Host Country Policy and Budgets

Host country policy in support of primary health care and of the extension of services throughout the country is important. Many developing countries have policies in support of countrywide prevention programs but still place greatest priority on curative

services and health care in urban areas.

Host country policy should be matched with an aggressive program for carrying out that policy. That may mean limiting free health care, reallocating financial and human resources, and finding ways to incorporate private enterprise into the health care system. Charging for health services that were formerly free can be extremely difficult politically.

9.4 Program Design: Categorical Versus Integrated Programs

While the idea of a community-based primary health care system is sound, developing countries often lack the human and economic resources to set up and maintain such programs, especially in more remote areas. Also, developing community support for such programs takes a long time.

Integrated programs have been fuzzy. Often they have had many objectives but few resources and personnel to carry them out. In attempting to do everything, they sometimes do nothing well. Information systems are often poor, and impact is either unmeasurable or is only significant after years or decades of work. The recent Child Survival Action Program is an effort to focus the old generalized health care programs on four areas that are known to have the greatest health benefits.

Programs focused on a specific disease or deficiency are tidier than integrated, multiservice programs. Areas and people to be reached are clear, and funding for supplies, personnel, and vehicles can be estimated with more precision. Because formulas can be used to calculate lives saved or illnesses averted through vaccination campaigns or spraying to destroy disease vectors, the evaluation of categorical programs is more accurate. When the only available personnel have limited education, and resources for training are scarce, programs with fewer objectives are easier to manage and more effective. Results may be measurable in weeks or months.

Demographics may also influence the selection of an integrated versus a categorical program. Because it is too expensive to have many separate categorical programs in isolated, difficult to reach areas, primary health care programs usually integrate family planning, vaccinations, vector control, and other services. In more densely populated areas, where large numbers of people can be reached with vertical programs, certain categorical programs may be preferable.

The appropriateness of an integrated or a categorical program is also related to the level of economic development of the country. In countries (such as most of those in Latin America) where the ministry of health is relatively well managed, where poverty is not too severe, and where health problems are not

devastating, integrated programs may be appropriate. Where poverty is extreme, where specific illnesses are evident, and where the local government is incapable of managing an integrated program, vertical programs of immunization, vector control, or oral rehydration may be most effective.

Both categorical and integrated programs have strengths and weaknesses. Categorical programs are easier to design and have more immediate and more clearly measurable impact. They can be costly if too many of them are undertaken, because each must have its own management system. They are generally not sustainable without donor support.

Integrated programs are more sustainable, but they often undertake too much with too few resources. Integrated programs are most effective when they start with a few limited objectives and add services as community support and health worker skills increase.

More research is needed on alternative organizational models and the sustainability of programs. There is evidence that separate programs are more apt to be effective, but are they sustainable? What happens to separate (categorical) programs after time passes? Is a separate program established for each illness?

9.5 Management and Resource Allocation

The health care system in every country is short of human and financial resources. In developing countries, these problems are acute. There are not enough trained health personnel of all types (physicians, nurses, midwives, pharmacists), and those available are trained in curative rather than preventive care. There are shortages of vehicles, spare parts, and fuel. Roads are often impassable, vaccines are frequently unavailable, and communication is usually poor.

Despite serious shortages of money and personnel and despite major management problems at all government levels, many health programs seem to work and to have some impact. Perhaps the question we need to ask is just how bad does the management and how limited do the resources have to be to render a program ineffective?

It is difficult to make generalizations about health care management because each program has its own organizational structure and works under different constraints and with different resources. However, many programs seem to be overmanaged or to suffer from some management problems. Research is needed to identify the most critical areas of management in a health care system and to distinguish between those parts of the system that are essential and those that contribute to its efficiency but are not vital to its continuation.

Despite serious management problems and limited resources, most health care systems continue to function, to provide some services, and to have some impact. Improved management and resource allocations make the health care programs more efficient, but poor management, it seems, does not necessarily render them ineffective.

The supervision, routine training, and support of community health workers are critical components for maintaining a good service delivery system. Effective supervision of health workers is one of the more difficult components of the management system. District or regional supervisors are low enough in the chain of command that they do not have dependable transportation, supplies, and other resources.

When community health workers have both preventive and curative responsibilities, there is a strong tendency to spend increasingly more time on curative services and less on preventive services. In isolated rural areas, where there are no physicians, community health workers may, in fact, perform services for which they are not adequately trained.

9.6 Feedback and Communication

An information loop that includes data on morbidity, mortality, referrals to clinics, services performed, and health worker effectiveness is important in maintaining a health program. The more extensive the system of useful information, the more effective and economical and the more sustainable the program can be. A minimal information system would allow for the ordering of supplies, monitoring of the services provided, and some assessment of impact.

Unfortunately, when resources are limited, staff overworked, and supervision weak, the feedback system suffers. Donors often request special reports or types of data, a problem compounded when the project has multiple donors. Much of the information that is collected is not analyzed and thus cannot be used.

We know more about the problems of information systems than we do about solutions to those problems. Documentation is needed on programs that have established and used effective, minimal information systems.

9.7 Conclusion

This paper has reviewed the issues relating to the sustainability of health benefits beyond donor financial, technical, and management support.

Diversified financing, community involvement, and program design appropriate to the resources and demography are all components of sustainable health service delivery systems.

Effective program management can reduce costs and maximize scarce resources. A number of issues need further research and documentation. A.I.D.'s experience has been mirrored in the experience of other large donors.

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